



August 31, 2010

Mr. Fonda Apostolopoulos  
Voluntary Clean-Up Program  
Hazardous Materials and Waste Management Division  
Colorado Department of Public Health and Environment  
4300 Cherry Creek Drive South  
Denver, Colorado 80246

**RE: 11380 Smith Road, Aurora, Colorado**

Dear Mr. Apostolopoulos:

On behalf of Aurora Smith Road Ventures, LLC, the current owner of the Subject Property, Strategic Environmental Management, LLC ("SEM") is submitting the attached "Application for Inclusion in the Voluntary Clean-Up Program – 11380 Smith Road, Aurora, Colorado" ("VCUP Application"). SEM has also enclosed a check, payable to the Colorado Department of Public Health and Environment ("CDPHE"), for \$2,000.

In order for this site to receive consideration to receive a letter of No Action Determination, a site-specific Materials Management Plan ("MMP") has been developed in the event that the current and/or future owner may need to remove concrete and expose and remove hydrocarbon contaminated soils.

The Materials Management Plan presented in this VCUP Application is based on a review of the site history, evaluation of historic on-site chemical usage, identification of potential areas of concern on-site, series of subsurface investigations of potential areas of concern and an analysis of potential risk posed by contamination identified at the site, as documented in the attached VCUP Application. This MMP ensures that any disturbance of the concrete floor and subsurface soils will be conducted so as to attain a degree of cleanup and control of hazardous substances and petroleum products, such that the property does not present an unacceptable risk to human health or the environment based on the future use.

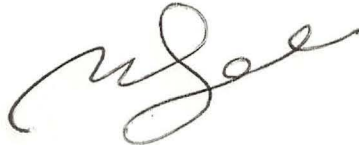
It is understood that upon completion of the voluntary cleanup plan as per the MMP, that is certified by an environmental professional, no further action would be required to assure that this property, when used for the purposes identified in the voluntary cleanup plan (M-3 – heavy industrial), is

protective of existing and proposed uses and does not pose an unacceptable risk to human health or the environment at the site.

SEM, on behalf of Aurora Smith Road Ventures, LLC, appreciates your review of the VCUP Application and requests that future correspondence from CDPHE regarding this application be addressed to both SEM and the owner's representative, Mr. David Goodell. Mr. Goodell's address is P.O. Box 609, Delmar, California 92014.

If you have any questions as you review this document, please contact me at 720-841-2200.

Sincerely,



Patrick E. Lee  
Principal

cc: David Goodell  
James Gruber



**APPLICATION FOR INCLUSION IN  
THE VOLUNTARY CLEAN-UP PROGRAM**

**11380 Smith Road, Aurora, Colorado**

*Prepared for:*

Aurora Smith Road Ventures, LLC  
5720 Old Carmel Valley Road  
Del Mar, California, 92130

*Prepared by*

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5030 South Fulton Street  
Greenwood Village, CO 80111

August 31, 2010



# **APPLICATION FOR INCLUSION IN THE VOLUNTARY CLEAN-UP PROGRAM**

**11380 Smith Road, Aurora, Colorado**

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## **1.0 INTRODUCTION**

Strategic Environmental Management (SEM) has prepared this Colorado Voluntary Clean-Up Program Application report on behalf of Aurora Smith Road Ventures LLC, the current owner of the property and building located at 11380 Smith Road, Aurora, Colorado (Site; Figure 1).

This report is being submitted to the Colorado Department of Public Health and Environment (CDPHE) for inclusion in the Voluntary Clean-Up Program (VCUP). This application outlines historic activities at the Site and identifies potential areas of concern (AOCs) at the Site where impact to soil and groundwater due to chemical release may have occurred at the Site and evaluates the risks posed by contamination found at the Site.

This report has been prepared in accordance with the requirements set forth under the Colorado Voluntary Clean-Up Program checklist. The page where each item listed in the checklist can be found in the report is noted and can be found in Appendix A.

### **1.1 Previous Environmental Investigations**

Several environmental investigations have been completed at the Site including:

- A Phase I Environmental Site Assessment on the Timminco Corporation Property - 11380 Smith Road prepared by Freedom Environmental in December 2006. A copy of this report is included in Appendix C.
- A Phase II Environmental Investigation prepared on the Dow Chemical Company USA's Magnesium Extrusion Facility located at 11380 Smith Road by Woodward Clyde International Americas on January 1999. A copy of this report is included with the December 2006 Freedom Environmental report.
- A Phase II Environmental Site Assessment prepared by Walsh Environmental on August 31, 2009. A copy of this report is included with the October 12, 2009 Sundance Environmental Phase I report.
- A Phase I Environmental Site Assessment prepared by Sundance Environmental on October 12, 2009. A copy of this report is included in Appendix D.
- A Phase II Environmental Site Assessment prepared by Sundance Environmental on June 21, 2010. A copy of this report is included in Appendix E.

## **1.2 Eligibility for Inclusion in the Colorado Voluntary Clean-Up Program**

Inclusion in the Voluntary Clean-Up Program is dependant on the property not being subject to actions under other environmental statutes or regulations. As per the Voluntary Clean-Up Plan and Redevelopment Act (Colorado Revised Statues CRS 25-16-301, 1994) inclusion is appropriate because the following criteria have been satisfied:

- The property is not listed on the National Priorities List under CERCLA;
- No portion of the property is subject to corrective action under orders or agreements issued pursuant to the provisions of Part 3 of Article 15 of CRS 25-16-301 or the Federal Resource Conservation and Recovery Act (RCRA) of 1976 as amended;
- The property is not a facility that has or should have a permit or interim status pursuant to Part 3 of Article 15 of RCRA Subtitle C for treatment, storage or disposal of hazardous waste; and,
- The property is not subject to underground storage tank provisions.



## **2.0 SITE BACKGROUND AND SETTING**

### **2.1 Site Setting**

The Site is located at 11380 Smith Road, at the southwest corner of the intersection of Smith Road and Moline Street in Aurora, Colorado. As shown on Figure 1, the total Site area is 5.7 acres with 78,221 square feet of floor space in the building on the Site. The land surrounding the building is made up of paved asphalt parking to the north and east, paved concrete storage area to the south and west, and a landscaped, grassy area that borders Smith Road to the north. A legal description of the property is included in Appendix B.

The Site lies at an elevation of 5,300 feet above mean sea level and is flat with a very slight slope to the southwest toward Sand Creek, which is located approximately 2,000 feet south of the Site and is the nearest surface water body. Storm water at the Site discharges to the Moline Street storm sewer and ultimately to Sand Creek.

The area around the Site is made up of mostly commercial and industrial properties with a large vacant lot to the west where it abuts the Denver County Jail. Directly adjacent to the south is the former Timminco Magnesium Extrusion building and then a building occupied by Russell Stover Candies. Moline Street adjoins the Site to the east followed by a building occupied by Iron Mountain, a records storage company. To the north, the Site is bordered by Smith Road followed by a railroad right-of-way.

### **2.2 Site Geology and Hydrogeology**

The Site is located in the Great Plains physiographic province. The soil survey for the Site vicinity indicated that it is located within an area of the Ascalon-Vona-Truckton association, described as "Nearly level to strongly sloping, well drained and somewhat excessively drained, loamy and sandy soils formed in wind-laid deposits; on uplands" (USGS – Sampson, 1974). The specific soil unit for the Site was the Truckton sandy loam. Underlying the Site soils are sediments of the Quaternary wind deposits beneath which are sediments of the Tertiary-Cretaceous Denver Formation and Lower Part of the Dawson Arkose sediments (Tweto, 1979). Wind blown sediments typically consist of fine-grained sandstones, siltstones and shales or claystones deposited in a wind-laid environment. The Denver and Dawson generally consist of shales and claystones with interbedded sandstones and siltstones.

The Site lies within the Denver Basin principal aquifer system (USGS, 1997). The upper units of the system include the Dawson, Denver and Arapahoe members, which are typically unconfined or semi-confined water-bearing zones. The stratigraphically lowest member of the aquifer system is the Cretaceous Fox Hills Formation, which is a confined water-bearing unit in much of the Denver metropolitan area.

Shallow groundwater flow typically follows, and can be hypothesized from, the general slope of the surface topography, but cannot be confirmed without the benefit of subsurface water level data. Although the topography slopes to the southwest, a subsurface investigation at the Site shows the direction of groundwater flow to be toward the northwest. The same report indicated



that groundwater was encountered at depths of 14 to 24 feet and that bedrock ranged from 22 to 38 feet with depths increasing from south to north.

### **2.3 Solid Waste Sites**

The December 2006 Freedom Environmental Phase I report indicated that two former solid waste disposal facilities "adjoin the Site, one to the east and one to the west. Available information indicated that the facility to the east was a demolition landfill, although it appeared that some methane was present in the past. The report indicated that no methane was present in October 1983. This landfill is cross-gradient from the Site. In the event that the groundwater at the facility has been impacted, it is possible that groundwater beneath the Site could be contaminated. The adjoining property to the west was identified as receiving "domestic refuse, construction debris, liquids, hazardous waste and industrial waste". However this fill area is down gradient and any impacts from that facility on the Site would be expected to be limited. The available information indicates that groundwater monitoring wells and soil samples have been collected and have demonstrated soil and groundwater impacts. Groundwater impacts included volatile organic compounds (VOCs) arsenic and lead."

### **2.4 Site Operational History**

The Site was reportedly undeveloped until late 1960s and may have been filled in before the building was constructed in 1969. The building and land was owned by Samuel Sokoloff et al. and then leased to the Dow Chemical Company for use as a magnesium extrusion and fabrication facility from 1969 to 1999.

The magnesium extrusion facility processed approximately 15 million pounds of magnesium per year. Raw materials consisting of magnesium ingots and billets were brought in by truck and rail car and stored in the south yard area. Seventeen inch diameter ingots were extruded through a 4,200 ton press to form 7", 8" and 9" diameter poles. These poles were then cut into billets and extruded through the 1,800 ton press into various shapes and profiles. They were then either shipped directly to the customer or they were sent to the fabrication department for further processing. Fabrication included processes such as machining and the installation of caps and other plastic components. All machining at the facility was dry and no cutting fluids were used. The facility operated 24 hours per day and 365 days a year.

One portion of the building, called the machine shop, located in the southwest corner of the building, was leased to Otis Elevator in the mid 1970's. Otis apparently used it as engineering and fabrication facility until it was returned to Dow Chemical in 1986.

In July 1999, the Timminco Corporation purchased the business from Dow Chemical and continued to operate the plant until they moved their operation to Mexico in August 2009. The building and yard is currently vacant.

## **2.5 Proposed Future Use**

The Site is currently zoned M-3, which is designated for Heavy Industrial in the City of Aurora. The proposed future use of the building and property at this time will be for a commercial or an industrial use. Prior to starting up their operation, portions of the existing concrete floors in the building may be removed, soil excavated for several feet and new concrete floors installed. In order to ensure that any future disturbance of site soils is done correctly and in an approved manner, a Materials Management Plan has been developed and presented in Section 5 of this application, and when implemented, will appropriately address impacted or potentially hazardous soils encountered during the construction.



### 3.0 SITE CHARACTERIZATION

Site investigations have been conducted by several environmental consulting firms to evaluate the presence and extent of contamination in the soil and/or groundwater at several locations both inside and outside the building where historical activity included the use of heavy industrial machinery, chemical storage and use. Details regarding the laboratory analytical methods used to test the samples taken are included in the individual reports. Copies of all reports presented can be found in Appendix C, D and E.

#### 3.1 Phase II Environmental Investigation - Woodward Clyde - January 1999

This Phase II field investigation focused on assessing the potential presence of contaminants in the soil and groundwater at the Dow Chemical Magnesium Extrusion Facility that included not only the Site but also an adjacent three acre parcel of land and a building to the south. As shown on Figure 2, this study was accomplished through the collection and laboratory analysis of soil and groundwater at 16 locations in five areas of concern.

**1) Drum Storage Area:** Two 8-foot soil borings, DSB-04 and DSB-05, were placed in an area where empty hydraulic oil drums were stored. Total Recoverable Petroleum Hydrocarbon (TRPH) was detected at 974 mg/Kg at the surface in one boring and at 102 mg/kg at a depth of 4 feet. Although there is no cleanup standard for TRPH established for the State of Colorado, a screening level of 500 mg/Kg has been established by the Division of Oil and Public Safety (OPS).

**2) Former Otis Operations Area:** Three 27-foot soil borings, DSB-01, DSB-02 and DSB-03, were placed to assess potential problems created by the former Otis Elevator operations. Only acetone and 2-butanone, both common lab contaminants were found in the laboratory results for both soil and groundwater.

**3) Property Boundary Wells:** Two down gradient groundwater monitoring wells, DMW-01 (33-foot) and DMW-02 (21-foot) were installed on the north and west property boundaries and two up gradient wells DMW-03 (17.2-foot) and DMW-10 (26-foot) were placed on the south side and east sides of the property respectively. No Volatile Organic Compounds (VOCs), Semi Volatile Organic Compounds (SVOCs) or petroleum hydrocarbons were detected in the groundwater samples from DMW-01, DMW-03 and DMW-10, wells indicating that contaminants were not migrating on to the property from off-site sources at that time. While concentrations of 1,1-dichloroethane (1,1-DCA), 1,2-dichloroethene (1,2-DCE), 1,1,1-trichloroethane (1,1,1-TCA) and tetrachloroethylene (PCE) were detected in DMW-02, located on the western boundary of the property, the levels do not exceed the current State of Colorado Water Standards. However, it does indicate that these solvents, down gradient of the 1,800 ton press, were used in the South Building.

**4) Press Pit Wells:** In order to assess potential impacts from the extrusion press pits, five groundwater monitoring wells were installed down gradient of the three press pits (4,200 ton in the Site building and the 1,800 ton and 500 ton presses in the south building).



- **Site Building** - Two wells were drilled in the Site building near the 4,200 ton press, DMW-05 (33.5-foot) and DMW-06 (34-foot). Only TRPH was detected in the soil at 25.7 mg/Kg at the 4 foot level in DMW-06, well below the OPS action level of 500 mg/Kg. In the same well, a groundwater sample detected the presence of 1,1,1-TCA, also well below the Colorado State Evaluation Values (CSEV) standard.
- **It should be noted that while the findings in the South Building are presented here as part of the Woodward Clyde report findings, the South Building is not part of this VCUP Application, but will be addressed as part of a separate and subsequent VCUP Application.**
- **South Building Soils-** Three wells were drilled in the South Building, two near the 1,800 ton press, DMW-08 (18-foot) and DMW-09 (19-foot) and DMW-07 (19.5foot) was placed near the 500 ton press. TRPH was detected in the soil at 2,970 mg/Kg at the 3 foot level and 2,700 mg/Kg at the 12 foot level in DMW-08, both exceeding the OPS action level of 500 mg/Kg. In the same boring, there were other detections of solvents in the soils at a depth of 3 feet but at levels well below CSEV standards.
- **South Building Groundwater** - While concentrations of 1,1-DCA, Toluene and 1,1,1-TCA were detected in the groundwater of all three wells, the levels did not exceed the current State of Colorado Water Standards. However, it does indicate that these solvents were used near the 1,800 ton press.

**5) Landfill Boundary Wells:** Two groundwater monitoring wells, DMW-04 (35-foot) and DMW-11 (26.8 foot) were installed on the western property boundary to determine potential impacts from the suspected landfill to the west of the Site. No Volatile Organic Compounds (VOCs), Semi Volatile Organic Compounds (SVOCs) or petroleum hydrocarbons were detected indicating that contaminants were not migrating on to the property from the suspected landfill.

### **3.2 Phase I Environmental Site Assessment - Freedom Environmental - December 2006**

In December 2006, Freedom Environmental conducted a Phase I Environmental Site Assessment of the Site which was occupied by the Timminco Corporation (Timminco) at the time. While the report concluded that the assessment revealed no evidence of Recognized Environmental Conditions (REC) for the Site, the report indicated that the Site was cited in the regulatory database in 1985 for a 10 to 20 gallon spill of PCBs onto the soil at the Site. Timminco had no record of the spill; however because of the age and size of the spill, it was not considered a REC.

The report also indicates that Timminco operated the Site much the same way as Dow Chemical had operated but after they took over in 1999, Timminco ceased using many of the solvents that were identified in the 1999 Woodward Clyde report. The solvents that were used for equipment maintenance were controlled and serviced by Safety Klean. It was also reported that the hydraulic fluid was used to drive the 4,200 ton and the 1,800 ton presses. All the pumps, flow lines and presses were operated within areas of secondary containment so that any leaks would be contained. Drummed new and used oil was also stored in secondary containment areas located inside the building. Acids and caustic baths fluids, used to clean dyes, and all used oil were managed by Clean Harbors. The outdoor storage areas were used to store raw magnesium and aluminum products. No hazardous substances, wastes or petroleum products were stored outside.



### **3.3 Phase II ESA – Walsh Environmental – August 31, 2009**

This investigation, involving the drilling of ten groundwater monitoring wells and two soil borings on the Site as shown on Figure 3 was designed to mirror the Woodward Clyde report completed 10 years earlier. Samples taken during the investigation detected arsenic in the soil that exceeded the CSEV but concluded that it was unlikely to adversely affect the environmental quality of the Site and appeared to be naturally occurring metal concentrations. TPH was also detected but was confined to beneath the building and did not contain PAHs above the CSEVs and did not impact the groundwater. Other chemicals of concern that exceeded the Drinking Water Standards were not expected to pose a risk to human health since the shallow water aquifer beneath the Site is not used for drinking water. The report concluded that no additional investigation is recommended.

### **3.4 Phase I ESA - Sundance Environmental – October 12, 2009**

The Sundance report indicated that the extent of oily contamination does appear to be limited based on the assessments performed by URS 1999 and Walsh 2009 but stated that they have not fully defined the extent of oils and solvents in the subsurface. In addition, Sundance identified a large gap in groundwater testing downgradient of the fabrication area and the former Otis area where there has been obvious oil spillage and solvents usage in the past. Accordingly, Sundance identified the undefined extent of oil-contaminated soil in multiple locations and the unknown extent of solvents in groundwater in the Former Otis Elevator and Fabrication Areas to constitute recognized environmental conditions.

### **3.5 Phase II ESA- Sundance Environmental – June 21, 2010**

This report summarizes two separate Site investigations that took place on September 23, 2009 and December 17, 2009.

In September 2009, Sundance Environmental Consultants advanced six shallow soil borings as shown on Figure 4. The purpose for the boreholes was to test for shallow soil contamination immediately below joints and cracks in concrete where moderate to heavy surficial oil staining was observed at four locations at the Site.

**1) Former Otis Operations Area:** One 18" soil boring, identified as HA-01 was placed to assess shallow soils by the former Otis Elevator operations. While there were detections of PCE, 1,1,1-TCA and Trichloroethylene (TCE) in the soil, none exceeded the CSEV for soil. However, TRPH, testing at 7,500 mg/Kg exceeded the OPS action level.

**2) 4,200 Ton Press Pit:** Two press pit borings, HA-02 to 4 feet and HA-03 to 18" were advanced in the Site Building. Once again there were minor detections of PCE, 1,1,1-TCA and Trichloroethylene (TCE) in the soil but the only contaminant to exceed the action levels for soil was TRPH. HA-02 had TRPH testing at 3,000 mg/Kg at a depth of 18" and then at 7,800 mg/Kg at 4 feet. HA-03 had TRPH testing at 9,400 mg/Kg at a depth of 18".



**3) Fabrication Area:** One soil borings, HA-04, was placed at a area of heavy floor staining near a fabrication machine and the soil at 14" tested positively for minor detections of PCE, 1,1,1-TCA and TCE, while TRPH was again detected, this time at 16,000 mg/Kg. The soil also tested for PCB at 2.1 mg/Kg at a depth of 14 inches. While this concentration exceeds the CSEV allowable of .74 mg/kg, it is well below the EPA action level of 50mg/Kg.

**4) Drum Storage Area:** Two shallow soil borings, HA-05 and HA-06, were placed in an area where empty hydraulic oil drums were stored. While there was only a slight detection of TRPH at 390 mg/Kg at a depth of 10", it was well below the OPS screening level of 500 mg/Kg.

Metals were detected in every sample taken in September, but no metals were detected above the CSEVs.

In December 2009, Sundance Environmental Consultants installed three groundwater monitoring wells as shown on Figure 5. The purpose for the wells was to fill in data gaps in the soil and groundwater testing performed in the past and to provide evidence of groundwater quality in areas down gradient of significant oil spillage areas at the Site. Note that one boring, SMW-01, was located in the South Building and this area is not included in this VCUP Application.

- **Site Area** – SMW-02 (27 foot) and SMW-03 (38.5 foot) were located outside the building and down gradient of the Former Otis Elevator Area and the Fabrication Area respectively. Only 1,1,1-TCA was detected in the groundwater at a concentration that was only one-tenth the State Groundwater Standard. No VOCs or petroleum hydrocarbons were detected in either soil or groundwater indicating that contaminants were not migrating from the building.
- **South Building** – SMW-01 (27 foot) was located down gradient and just outside of the building where the 1,800 ton press was located. While there were no detections of VOCs or petroleum hydrocarbons in the soil and groundwater, PCB at .001mg/L was found in the groundwater. This concentration exceeds the Colorado Groundwater Standard of .000017 mg/l.



## **4.0 APPLICABLE STANDARDS/RISK DETERMINATION**

### **4.1 Introduction**

The VCUP Application requires that existing Site conditions be compared to promulgated State of Colorado standards or other appropriate risk-based criteria if no promulgated standards exist. The Colorado Department of Public Health and Environment (CDPHE), Hazardous Materials and Waste Management Division (HMWMD) have established Colorado Soil Evaluation Values (CSEVs) dated December 2007 for a large number of contaminants. The CSEVs for a worker, who may occasionally contact Site soils, are appropriate for screening the results at the Site. Since there is no State cleanup standard for Total Recoverable Hydrocarbons in soils, a screening level of 500 mg/Kg has been established by the Division of Public Safety for defining the extent of TRPH from fuel releases. CDPHE has also prepared Regulation No. 41, The Basic Standards for Ground Water, effective November 2009. The contaminants detected in both soil and groundwater at this Site has been compared to these standards in the paragraphs that follow.

Justification for a request for no action will demonstrate that the contaminants on the Site meet the promulgated standards and that the risk is acceptable, given the proposed land use.

### **4.2 Extent of Soil and Groundwater Contamination**

Total Recoverable Petroleum Hydrocarbons (TRPHs) in soils have been detected in three former operational areas within the Site Building; the Former Otis Elevator Area, the 4,200 Ton Press Area and the Fabrication Area. As shown on Table 1, Diesel Range Organics were observed five of the six borings but the concentrations did not exceed the OPS screening figure of 500 mg/Kg. However TRPH, in the form of Motor Oil, has been found in the shallow soils at concentrations ranging from 3,000 to 16,000 mg/Kg beneath the concrete at depths ranging from 14" to 48" deep in the three operation areas. These concentrations of TRPH triggered the testing for Polycyclic Aromatic Hydrocarbons (PAHs). While concentrations of Tetrachloroethene, Trichloroethene, 1,1,1-trichloroethane (1,1,1-TCA), 1,2,4-Triethylbenzene and 1,2,3-Triethylbenzene were detected in the shallow soils, they were all at levels well below CSEV standards. These chemicals were not used extensively at the Site and probably result from their use as floor cleaners in the heavily oil-stained and cracked concrete areas.

Table 2 indicates the results for PCBs, PAHs and Metals and shows that soil had detections of both Metals and PAH's but no contaminant exceeded the CSEV regulatory allowable. However the soil tested for PCB at 2.1 mg/Kg, exceeding the CSEV allowable of .74 mg/kg at a depth of 14 inches at an area of heavy floor staining near a fabrication machine. The PCB source was more than likely an electrical motor and transformer set associated with the fabrication machine.

Table 3 indicates that only 1,1,1-TCA was detected in the groundwater at a concentration that was only one-tenth the State Groundwater Standard. No VOCs or petroleum hydrocarbons were detected in either soil or groundwater samples taken from the two down gradient wells in December 2009, indicating that contaminants were not migrating from the Site Building.



### **4.3 Future Potential Human and/or Environmental Exposure**

#### **4.3.1 Direct Contact Soil Exposure**

Concentrations of Total Recoverable Petroleum Hydrocarbons in samples collected in the shallow soils in the Site Building exceed OPS cleanup standards. PCB has also been detected in concentrations that exceed the CSEV regulatory standard. However, these contaminants are currently sealed beneath the concrete floors in the building. Therefore this contaminated soil does not pose an unacceptable risk based on direct contact to either human health or the environment. In the event that future occupants of the Site Building were to remove the concrete to accommodate a new use for the building, a Soil Management Plan has been developed to manage the residual environmental impacts. This Soil Management Plan is provided in Section 5.

#### **4.3.2 Vapor Inhalation**

Soil and groundwater which contain volatile organic chemicals can create the potential for chemical vapors to migrate from the subsurface to overlying buildings. However as shown on Table 1 and 3, all concentrations of Site compounds of concern are below the regulatory screening levels. Therefore no unacceptable risk is posed by contamination identified at the Site via the vapor intrusion to indoor air pathway.

#### **4.3.3 Groundwater Exposure**

The Site currently receives drinking water from the public water supply and there are no future plans to install a drinking water well at the Site. A review of the EDR report published with the October 12, 2009 Phase I report provides a detailed list of 53 water wells located within one-half mile of the Site and none of these wells are used for supplying drinking water. Figure 6, taken from the ERD report also provides evidence that there are no Public Water Supply Wells within a mile of the Site.

Groundwater contaminant concentrations, based on the most recent well sampling in December 2009, are below the Colorado Groundwater Organic Chemical Standards as published in Regulation 41 and it appears that the chemicals are not migrating off-site. Therefore, contamination of groundwater at the Site does not present an unacceptable risk to either on-site or off-site receptors now or under future use for the Site.



## **5.0 MATERIALS MANAGEMENT PLAN**

The purpose of this Materials Management Plan (MMP) is to address expected contamination identified in concrete and soil beneath the concrete in the event that future occupants of the Site Building were to remove the concrete and soil to accommodate a new use for the property.

The primary goals of the MMP are as follows:

- Limit worker exposure to contaminated materials;
- Prevent any potentially contaminated materials which may be generated during the renovation from impacting human health and the environment;
- Ensure that the disposition of all contaminated or potentially contaminated materials is conducted according to all Local, State and Federal environmental regulations;
- Provide the basis for a Health and Safety Program (HASP) for the field activities involving soil excavation at the Site; and,
- Ensure that a qualified environmental professional will implement the SMP and provide any of the required monitoring activities.

The tasks and responsibilities required to minimize exposure to potentially hazardous substances and properly manage the affected soils are as follows:

- Identify Chemicals of Concern and the Areas of Interest
- Field Monitoring
- Materials and Soil Management
- Transportation and Disposal
- Health and Safety

### **5.1 Identify Chemicals of Concern and Areas of Concern**

Based on the information obtained from the previous environmental reports that have been reviewed in this VCUP Application, elevated concentrations of Total Petroleum Hydrocarbons (TPH) and to a more limited extent, PCBs, have been identified in the shallow soils in three major Areas of Concern (AOCs) in the Site Building. These areas are identified in Figure 7 and have been named: 1) Fabrication Area, 2) 4,200 Ton Press Area and 3) Former Otis Elevator Area. Concentrations of PCBs tested at 2.1 mg/Kg have been detected in the Fabrication Area and TPHs ranging from 3,000 to 16,000 mg/Kg have been identified in all three AOCs.

### **5.2 Field Monitoring and Testing**

Field monitoring of soil and concrete will be conducted throughout any invasive or earth moving activities by a qualified environmental professional. The data will be used both for worker protection screening and to determine possible future use or disposal options. Worker protection



levels for exposure to the chemicals of concern will be developed along with the HASP. Disposal options will include whether the excavated material can be reused on-site, off-site or if off-site disposal will be required. Field monitoring will also determine the initial disposition of soils being removed during excavation.

Concrete and soils with potential hydrocarbon or volatile organic compounds contamination that are excavated and exposed during the renovation construction activities will be field screened for organic vapors using a Photo Ionization Detector (PID).

#### **5.2.1 Total Petroleum Hydrocarbons**

Samples for field screening will be collected at a rate of one grab sample per 10 cubic yards of soil excavated or disturbed. If any visible soil staining is observed or if the field screen concentrations exceed 50 parts per million (ppm) the soil will be temporarily stockpiled in the TPH Stockpile on plastic sheeting in the open storage yard to the south of the Site Building. If soil field screening measurements are in excess of 500 ppm, the breathing zones of the excavation contractor personnel will immediately be screened. In addition, the excavation contractor supervisor and the Health and Safety Officer will be notified. If breathing zone concentrations exceed 500 ppm, work will cease, workers will leave the immediate area and this will allow the vapors to equilibrate with atmospheric conditions.

#### **5.2.2 PCBs**

Concrete and soils with potential PCB contamination have been identified in the Fabrication Area. If the concrete and subsurface soils are disturbed during the renovation, soils from this area should be taken to a special PCB Storage Area.

#### **5.2.3 Clean Soils**

Concrete and soils removed from areas other than the three AOCs will be tested with the use of the PID meter to ensure that the soils do not contain TPHs or VOCs. Samples for field screening will be collected at a rate of one grab sample per 100 cubic yards of soil excavated or disturbed. A meter reading over 50 ppm will require that the soils be taken to the TPH Stockpile. Soils testing below 50 ppm will be taken to the Clean Soil Stockpile.

#### **5.2.4 Confirmatory Post-Excavation Sampling**

Confirmatory post-excavation soil samples will be collected from the base of the excavation at a frequency of one per 5,000 square feet with a minimum of two base samples. If PID readings indicate that contamination will remain in place beneath the propose construction, one additional sample will be collected from the area of the base of the excavation with the highest PID reading. Composite confirmatory sidewall samples will be collected at a frequency of one per every 100 feet of wall with a minimum of one sample from each side wall.



### **5.3 Concrete and Soil Management**

As described above, the results of the laboratory testing indicate whether or not chemicals in Site soils present an unacceptable human health risk. Furthermore, dust from a construction site can present a nuisance if not controlled. Likewise, erosion of on-site soil during construction activities can increase the turbidity of surface water run-off. Therefore, the MMP will also provide guidelines for soil handling, stockpiling, dust and erosion minimization during site construction activities for the future renovation.

#### **5.3.1 Notification**

In order that an environmental professional will be available to monitor soil excavation activities at the Site and, an environmental professional will be notified by the Site contractor prior to the start of excavation. At that time, an area designated for the Temporary Storage Areas for Clean, TPH and PCB soils will be identified.

#### **5.3.2 Dust Control**

The dust control measures to be implemented at the Site consist of:

- Water all active construction areas at least twice daily or as necessary to prevent visible dust plumes from migrating outside of the Site limits.
- Mist or spray water while loading transportation vehicles.
- Minimize drop heights while loading transportation vehicles.
- Use tarpaulins or other effective covers for trucks carrying soils that travel on public streets.
- Sweep all paved access routes, parking areas and staging areas daily, if visibly soiled.
- Sweep street daily if visible soil material is transported onto public streets from the Site.

#### **5.3.3 Erosion Control**

A Stormwater Pollution Prevention Plan (SWPPP) will be developed by the Site contractor and the site contractor prior to initiation of Site work that details procedures for minimizing erosion. The SWPPP will include elements such as silt traps and hay bales to minimize surface water runoff from the Site into storm drains, berms to control Site runoff, and covering soil stockpiles, as required, during the rain events to minimize sediment runoff.

#### **5.3.4 Concrete and Soil Stockpile Management**

Temporary stockpiling of excavated soil and concrete will be necessary throughout site construction. Polyethylene sheeting will be used to stage all soils and concrete excavated during invasive activities. This method will serve to prevent infiltration of contamination to surface soils. These soil and concrete piles will be further isolated using hay bales to prevent contaminated runoff from spreading to the rest of the Site. Soil stockpiled at the Site will be lightly sprayed with water as needed to minimize dust. There will be three Temporary Storage



Areas, one for soils and concrete suspected to contain PCB from the Fabrication Area called the PCB Storage Area, one for all soils taken from the three AOCs called the TPH Storage Area and one for soils and concrete removed from all other areas called the Clean Storage Area.

**PCB Stockpile:-** Soil and concrete suspected of containing PCB will be taken to the designated PCB Soil and Concrete Storage Area and placed on plastic sheeting with erosion controls and cover requirements and tested separately for PCB. Laboratory test results will determine if the material is hazardous or non hazardous and be disposed of accordingly as per Section 5.4.

**TPH Stockpile:-** Soils and concrete removed from the three areas of concern will be stored separately in the open storage yard south of the Site Building. Soil will held there temporarily until its ultimate destination is determined as described in Section 5.4.

**Clean Soil Stockpile:-** All soils and concrete removed from the Site Building that has been determined to be clean will be placed in this area until its ultimate destination has been determined.

In addition to field screening, composite samples will be collected from stockpiled soil and concrete for disposal characteristics. At a minimum, one composite sample will be collected from every 500 cubic yards of materials and analyzed for TPH, VOCs, SVOCs, metals and TCLP metals as well as reactivity, corrosively, ignitability and paint filter. Additional waste characterization samples may be required depending upon the specific requirements of the selected waste disposal facility.

### **5.3.5 Site Access Control**

The construction site will be fenced to control pedestrian or vehicular entry, except at controlled points (i.e., gates). Gates will be closed and locked during non-construction hours. "No-trespassing" signs will be posted every 500 feet along the fencing.

## **5.4 Transportation and Disposal**

Based upon sample analytical results, excavated concrete and soil will be classified as one of the following:

- Uncontaminated- Unrestricted Use
- Uncontaminated- Restricted use
- Health Risk – Restricted Reuse or Disposal; or
- Hazardous Waste Disposal

The disposition of concrete or soil in each of these four categories is outlined in the following subsections:



#### **5.4.1 Uncontaminated- Unrestricted Use**

Soils with TPH below the respective residential or groundwater protection CSEV may be reused at any location on-site or off-site.

Detailed documentation of the on-site or off-site disposition will be maintained by the contractor and the environmental professional implementing this MMP. Documentation should include analytical data, how and where the soils are used on the project and whether clean cover material will be placed above the reused soil.

#### **5.4.2 Uncontaminated - Restricted Use**

Soils with TPH above the respective residential CSEV, but below the worker protection CSEV may be reused at an on-site or off-site industrial property. Soils testing above the CSEV for residential land use but below the CSEV for worker protection may be reused at a residential property if the soil is capped by an engineered barrier such as asphalt or concrete, assuming that the groundwater ingestion pathway is incomplete. Detailed documentation of all soil reuse will be required.

#### **5.4.3 Health Risk- Restricted Reuse or Disposal**

For soils that exceed worker protection CSEVs for TPH, it will be necessary to conduct a risk analysis regarding the reuse of the soil. If the risk analysis is prohibitive or prolongs the project, landfill disposal may be recommended. The environmental professional implementing the MMP will be able to recommend additional alternatives. In the meantime, this soil will be placed in the TPH Stockpile on top of 10 millimeter plastic sheeting. This stockpile will be maintained by the contractor to prevent any runoff from migrating offsite. Detailed documentation of all soil reuse will be required.

#### **5.4.4 Hazardous Waste Disposal**

If sample analysis indicates that the soil is designated as hazardous waste, the soil will be containerized immediately in a lined roll-off box, labeled and transported to the PCB Storage Area, pending offsite disposal at a hazardous waste disposal facility. These wastes will be manifested and transported to the disposal facility in accordance with State and Federal regulations. Once identified as hazardous waste, this material may not be stored onsite longer than 90 days.

The disposal facility chosen to accept the hazardous waste will be suggested by the onsite environmental professional implementing the MMP. There are no facilities in the State of Colorado that are licensed to accept hazardous waste. Facilities in Utah and Texas are the closest licensed facilities. Transportation and manifesting of these waste materials on public highways, streets or roadways will be in accordance with 49 CFR and any applicable CDOT regulations.



### **5.5 Health and Safety**

In addition to the guidelines specified within this MMP, all construction and demolition contractors and subcontractors working at the Site will develop a Health and Safety Plan (HASP) adequate to ensure safe work practices. The HASPs will be reviewed and signed by a Certified Industrial Hygienist.

All personnel entering or working at the Site will be trained in appropriate safety procedures. If contaminated environmental media is encountered, personnel involved in the handling this material will be trained in appropriate safety procedures as set forth in Title 29 of the Code of Federal Regulations (CFR), specifically 29 CFR 1910, also known as the Hazardous Waste and Emergency Response (HAZWOPER) standard. Personnel entering or working at the Site will also be familiar with first aid and cardiopulmonary resuscitation.

Personnel will be dressed in personal protective equipment (PPE) as appropriate to the activity being performed in accordance with guideline in the HASP. If Site conditions or the results of air monitoring performed during on-site activities warrant higher level of protection, field personnel will withdraw from the Site and wait for further instructions from the environmental professional.

## **6.0 REFERENCES**

Department of Agriculture, Soil Conservation Service, Soil Survey of Adams County, Colorado, John J. Sampson et al., October 1974.

Department of Interior, US Geological Survey, Geologic Map of Colorado, compiled by Ogden Tweto, 1979.

Department of Interior, US Geological Survey, Groundwater Atlas of the United States Segment 2, Hydrological Investigation Series Map HA 730 C, 1997.

Colorado Department of Public Health and Environment. Voluntary Clean-Up Roadmap, May 2008.

Colorado Department of Public Health and Environment, Hazardous Materials and Waste Management Division -Table 1 Colorado Soil Evaluation Values (CSEV) – December 2007

Colorado Department of Public Health and Environment Water Quality Control Commission – 5 CCR 1002-41 Regulation No. 41 – The Basic Standards for Groundwater – November 30, 2009



# Phase I Environmental Site Assessment

Former Timminco Facility  
11380 Smith Road, Aurora, Colorado

October 12, 2009

Sundance Environmental Consultants, Inc.  
11584 Wilson Circle, Parker, CO 80134  
(303) 699-7870

Produced For:  
Aurora Smith Road Ventures, LLC



**Phase I Environmental Site Assessment  
Former Timminco Facility, 11380 Smith Road, Aurora, CO**

## **1 SUMMARY**

This property has been used as a magnesium extrusion facility for 40 years, since the land was first developed in 1969. It has supported machine shop activities in multiple areas of the facility. Tanks of oil were required to operate the hydraulic press systems. Various cleaners, including chlorinated solvents and acids, have been used to clean the machinery and materials. Soil and groundwater testing has already been performed at this site over the past 10 years. Oils have been detected in soils, and chlorinated solvents have been detected at very low levels in soil and groundwater. These detections constitute a release of oils and solvents to the subsurface.

Based on the assessment reports of URS 1999 and Walsh 2009, the oil and solvent impacts detected would not require remediation by State regulators. Assessment work by Sundance in September 2009 has not yet been published. The URS 1999 report was submitted to The Colorado Department of Public Health and Environment for review, which resulted in a “no further action” designation for the facility. The NFA letter cautioned that this “does not relieve the property owner of liability or need for possible further actions should problems arise from contamination remaining on site.”

Sundance believes that the extent of oily contamination does appear to be limited based on the assessments performed by URS 1999 and Walsh 2009. However, they have not fully defined the extent of oils and solvents in the subsurface. Specifically, the extent of oily contamination has been shown to reach at least 12 ft below grade such as at URS test location DMW-08 by the 1800 ton press. Additionally, there is a large gap in groundwater testing between DMW-01 and DMW-04, downgradient of the fabrication area and the former Otis area where there has been obvious oil spillage and solvents usage in the past. These assessment efforts did not include sufficient shallow soil testing near the press and hydraulic line pits to evaluate for the presence of leaked oil in these areas. We consider 1) the undefined extent of oil-contaminated soil in multiple locations and 2) the unknown extent of solvents in groundwater in the Otis/fabrication areas to constitute recognized environmental conditions. We believe this warrants further soil and groundwater testing to verify that no significant impacts remain due to operations by a 40-year tenant who is vacating the property. In the absence of this testing, the property owner must be aware that a future tenant or owner may require this type of testing prior to taking responsibility for all potential environmental issues at this property.

We have performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM practice E 1527-05 of the Former Timminco facility at 11380 Smith Road, City of Aurora, Adams County, Colorado, the property. Any exceptions to, or deletions from, this practice, are described in the Deviations section of this report. This assessment has revealed no evidence of recognized environmental conditions in connection with the property, except:



**Phase I Environmental Site Assessment  
Former Timminco Facility, 11380 Smith Road, Aurora, CO**

- Spillage of oil may have created soil impacts of unknown extent in multiple locations including by the 1800 ton press and oil skimmer room, by the 4200 ton press and fabrication area, by the former Otis sublet and maintenance area, and by the water runoff ditch along the western fence by the southern building.
- It has not been demonstrated that the groundwater near the Otis sublease and fabrication areas contain no impacts above State standards, although an “NFA” was granted for this issue in 1999.

Sundance is also identifying the following environmental concerns: (Environmental concerns could potentially have an impact on the site, but would be considered *de minimis* or out-of-scope under the ASTM Standard Practice. No further action or inquiry is recommended except as noted.)

- Tenant housekeeping should include the disposal of the liquid in the unlabeled Home Depot bucket in a janitor’s closet, the clean up of the free oil on the floor of the fabrication area, and the management of the grey ash/metallic powder by the NW corner outside the southern building, and the propane AST should be closed in the State records;
- There may be some PCBs remaining in the oils of the electrical transformers even though they appear to have been flushed many years ago, and PCBs may occur in other electrical equipment or lighting ballasts. Unless documentation of testing is available, this electrical equipment will require testing for PCBs and possible special handling when this equipment is upgraded in the future.

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## **2 INTRODUCTION**

### **2.1 PURPOSE**

The purpose of this Phase I Report is to identify recognized environmental conditions, meaning “the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property. The term includes hazardous substances or petroleum products even under conditions in compliance with applicable laws. The term is not intended to include *de minimis* conditions that generally do not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. Conditions determined to be *de minimis* are not recognized environmental conditions” (ASTM 2005).

### **2.2 DETAILED SCOPE-OF-SERVICES**

The scope of services includes performing a Phase I Environmental Site Assessment in accordance with ASTM Standard Practice E 1527-05. All appropriate inquiry into the previous ownership and uses of the property will be consistent with good commercial and customary practice for identifying recognized environmental conditions, if any, at the subject property. The work to be performed includes records review, site reconnaissance, interviews, and data evaluation/report preparation.

### **2.3 SIGNIFICANT ASSUMPTIONS**

Significant assumptions include that the location of the property has been adequately defined by the user, that knowledgeable site personnel will be available for interviewing, and that the property will be reasonably accessible for inspection.

### **2.4 LIMITATIONS AND EXCEPTIONS**

Uncertainty Not Eliminated. No environmental site assessment can wholly eliminate uncertainty regarding the potential for recognized environmental conditions in connection with a property. Performance of this practice is intended to reduce, but not eliminate, uncertainty regarding the potential for recognized environmental conditions in



**Phase I Environmental Site Assessment  
Former Timminco Facility, 11380 Smith Road, Aurora, CO**

connection with a property, and this practice recognizes reasonable limits of time and cost (ASTM 2005).

Not Exhaustive Assessment. An exhaustive assessment has not been made on the subject property due to additional cost needed to obtain information or in the time required to gather it could outweigh the usefulness of the information and, in fact, may be a material detriment to the orderly completion of transactions.

Level of Inquiry is Variable. Not every property requires the same amount of environmental assessment work. Consistent with good commercial or customary practice, the appropriate level of environmental site assessment will be guided by the type of property subject to assessment, the expertise and risk tolerance of the user, and the information developed during the course of the inquiry (ASTM 2005).

Comparison With Subsequent Inquiry. It should not be concluded or assumed that an inquiry was not all appropriate inquiry merely because the inquiry did not identify recognized environmental conditions in connection with the subject property. Environmental site assessments must be evaluated based on the reasonableness of the judgments made at the time and under the circumstances in which they were made (ASTM 2005).

Continued Viability of Phase I Environmental Site Assessment. It is important to note that, according to the ASTM E 1527-05 standard, a Phase I is considered valid for 180 days. Beyond that, a Phase I that is still less than one year old could be considered valid if it is updated in several key areas, including interviews, record searches, and the visual inspection.

Legal Requirements. This assessment does not address requirements of any local, state, or federal laws other than the all appropriate inquiry for CERCLA's landowner liability protections. Users are cautioned that federal, state, and local laws may impose environmental assessment obligations that are beyond the scope of this practice. Users should also be aware that there are likely to be other legal obligations with regard to hazardous substances or petroleum products discovered on the property that are not addressed in this practice and may pose risks of civil and/or criminal sanctions for noncompliance.

## **2.5 SPECIAL TERMS AND CONDITIONS**

There are no special terms or conditions.

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## **2.6 USER RELIANCE**

The User may be expected to rely on this report to fulfill all appropriate inquiry requirements for identifying recognized environmental conditions in connection with the subject property. The User for this report is Aurora Smith Road Ventures, LLC.

The User may want to consider evaluating several items in connection to commercial real estate which are beyond the scope of an ASTM E 1527-05 Phase I, including but not limited to: asbestos-containing building materials, radon, lead-based paint, lead in drinking water, wetlands, regulatory compliance, cultural and historic resources, industrial hygiene, health and safety, ecological resources, endangered species, indoor air quality, biological agents, and mold.

The User should be aware that review of recorded land title records and judicial records for environmental liens or activity and use limitations is outside the scope of an ASTM Phase I. The user should engage a title company or title professional to undertake these reviews.



**Phase I Environmental Site Assessment  
Former Timminco Facility, 11380 Smith Road, Aurora, CO**

### **3 SITE DESCRIPTION**

#### **3.1 LOCATION AND LEGAL DESCRIPTION**

Location: 11380 Smith Road, also addressed as 3355 Moline Street, City of Aurora, Adams County, Colorado.

Legal Description: SUB: MORRIS HEIGHTS FILING NO. 2 AMENDED BLK: 18  
DESC: BEG AT NW COR BLK 18 TH S ALG W LN SD BLK 584/69 FT TH ELY ON  
ANG TO LEFT OF 90 D 471/235 FT TH NLY ON ANG TO LEFT OF 90 D 536/545 FT  
TO NLY LN SD BLK TH NLY ON ANG TO LEFT OF 84 D 10 473/69 FT TO POB EXC  
30 FT.

#### **3.2 SITE AND VICINITY GENERAL CHARACTERISTICS**

Lot Size: 7.53 acres.

Property Type: Commercial.

Zoning: M-3.

Fire Dept.: Aurora Fire Department.

Surface Gradient: Southwest toward Sand Creek.

Groundwater Flow: Northwest (per Robson 1996.)

#### **3.3 CURRENT USE OF THE PROPERTY**

The property has largely been vacated. It consists of two large warehouse-like buildings with an office area, and parking or storage areas. The office area still has some furniture, fixtures, and cleaning supplies. Some mechanical equipment remains in the production areas.

#### **3.4 PAST USES OF THE PROPERTY**

The property was undeveloped at least back to 1957, according to historic topographic maps. The north building was built in 1969 and the south building followed in 1972.

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Up until 1998, the buildings were leased for the Dow Chemical Magnesium Extrusion fabrication plant. From the mid-1970's until 1986, the machine shop area of the main building was sub-leased to Otis Elevator. Timminco Corporation bought the extrusion business in 1998 and continued to lease the property.

The facility can process about 15 million pounds of magnesium annually. Magnesium ingots were extruded through the 4200 ton press to form poles, which were cut into billets. The billets were extruded through the 1800 ton press into various shapes. These products were either shipped or sent to the fabrication area for further work. Fabrication consisted of dry machining or plastic component addition.

### **3.5 DESCRIPTION OF STRUCTURES, ROADS, OTHER IMPROVEMENTS ON THE SITE**

The north building comprises 78,221 square feet. There is an additional 9,000 square feet of office space facing Smith Road on the north. The south building comprises 38,660 square feet. The buildings were constructed in 1969 and 1972, with renovation in 1990.

Both buildings have well-distributed electrical power, 4,000 Amp/480 V. The office areas are air-conditioned. The heat is radiant and gas-forced air. There are two drive-in loading doors and three dock-high loading doors. The facility is served by public water and sewer services.

Paved asphalt and concrete parking surrounds most of the buildings. Some pavement is in deteriorating condition. Grass exists to the front of the property on Smith Road, and there is a gravel area that has been used for storage on the west side of the main building.

### **3.6 CURRENT USES OF ADJOINING PROPERTIES**

North:	No address	Railroad Right-Of-Way
East:	3596 Moline St.	Low Price Auto Surface Preparation Alex's Auto Repair Adonai CNC Technical Svc. Rocky Mountain Interlock Raleigh Roofing Mountain High Landscape Denver Dent Denver Cichlidarium



**Phase I Environmental Site Assessment  
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		Tropical Fish A-Team Services Conolly Construction Advanced Window Systems DNAS, Inc.
	3576 Moline St. 3344 Moline St.	Rocky Mountain Info Mgmt. Rocky Mountain Info Mgmt.
South:	3333 Moline St.	Russell Stover Candy
West:	10500 Smith Rd.	Closed landfill area next to Denver County Jail

### **3.7 PAST USES OF ADJOINING PROPERTIES**

Commercial development of the east-adjoining and south-adjoining properties started in the 1970's. There was a landfill area approximately 150 feet east of the subject property in operation from 1958-60. That site was Investigated and found to have low environmental risk to the subject property.

The west-adjoining property was used for landfill of "construction debris and household solid waste" around the 1960's. Although the landfill area to the west has not been studied by regulatory bodies, it is downgradient of the site and not considered an environmental risk under current conditions.

The north-adjoining property has been railroad tracks since the early 1900's.

## **4 USER PROVIDED INFORMATION**

### **4.1 TITLE RECORDS**

No title records were available for review.

### **4.2 ENVIRONMENTAL LIENS OR ACTIVITY AND USE LIMITATIONS**

None known to User.

### **4.3 SPECIALIZED KNOWLEDGE**

**Phase I Environmental Site Assessment  
Former Timminco Facility, 11380 Smith Road, Aurora, CO**

None known to User.

#### **4.4 COMMONLY KNOWN OR REASONABLY ASCERTAINABLE INFORMATION**

The metal being processed was primarily magnesium. There are areas of spilled oil in the buildings.

#### **4.5 VALUATION REDUCTION FOR ENVIRONMENTAL ISSUES**

None known.

#### **4.6 OWNER, PROPERTY MANAGER, AND OCCUPANT INFORMATION**

The building has primarily been leased to Timminco and its predecessors since construction. Contact Michael Still and Jim Baker of Timminco.

#### **4.7 REASON FOR PERFORMING PHASE I**

Tenant has left the property and owner needs to make sure there are no environmental problems.

#### **4.8 OTHER**

User provided a previous Phase I (Freedom 2006) and Phase II (Walsh 2009) report on the property. These are reviewed in a subsequent section of this report.

### **5 RECORDS REVIEW**

#### **5.1 STANDARD ENVIRONMENTAL RECORD SOURCES AND RESULTS**

The primary environmental record source is Environmental Data Resources, Inc. (EDR), which is a standard provider for this information to the industry. Portions of the EDR Report is in the Appendix. The following listings are within the search radius specified by ASTM 2005, around the subject property.



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Database	Facility/Address (Aurora/Denver, CO)	Comments
RCRA-SQG FINDS AST	Timminco Corp. 3355 Moline St.	On-site. RCRA Status: Permitted to generate D007 (Chromium) and F002 (Halogenated Solvents) hazardous wastes.  Notice of Violation: 9/23/02. Areas of Violation: waste accumulation time, used oil management, paperwork entries, and Land Disposal Restriction issues. Date Achieved Compliance: 12/4/02.  Facility Self-Disclosure 7/7/08 no issues listed. Focused Compliance Inspection 2/20/08 no issues noted.  AST Status: One LPG tank open.
FINDS RCRA-CESQG	Old Castle Glass 11205 E. 37 <sup>th</sup> Ave.	832 ft NW. Downgradient Status: Notice of Violation for Generators General on 12/3/84 and Enforcement Action informal on 4/15/85.
LUST FINDS UST RCRA-CESQG	Frito-Lay 11645 E. 37 <sup>th</sup> Ave.	1047 ft ENE, Cross-gradient LUST Status: Closed 3/14/97, 11/16/90. UST Status: Closed six tanks. RCRA Status: No violations.
CERCLIS FINDS	SIA Aurora Treatment Plant, 33 <sup>rd</sup> and Lima	1067 ft S, Up- or cross-gradient Status: Low priority for further assessment as of 12/15/95. 58 acre area, some impacts of VOCs and SVOCs to groundwater exist. Not considered an issue for subject property since it is not directly upgradient, and EPA has screened it as a low priority.
AST	Vance Brothers 3313 Moline	1082 ft S, Up- or cross-gradient AST: LPG tank onsite
LUST UST AIRS	Flannagan Read-Mix 11400 E 33 <sup>rd</sup> Ave	1138 ft S, Up- or cross-gradient Two large diesel tanks leaked. Facility now closed. AIRS: permitted for particulate emissions

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CORRACTS RCRA NON-GEN	Pull N Save Auto Parts 11602 E 33 <sup>rd</sup> Ave	1369 ft SE, Upgradient Corrective measures evaluated in 2005, work plan approved, Focused compliance inspection by State in 2007, no reported findings. Does not appear to be a significant issue for the site, due to distance and regulatory status.
LUST UST	Dixon Paper Co. 3900 Lima St.	1700 ft N. Cross- or downgradient LUST Status: Closed 3/19/90. UST Status: Closed two tanks.
LUST UST	Nome Industrial Center 3850 Nome St.	1743 ft NE. Cross-gradient LUST Status: Closed 12/13/96. UST Status: Closed one tank.
LUST LAST	TruServ 11275 E. 40 <sup>th</sup> Ave.	2214 ft N. Cross- or down-gradient LUST Status: Closed 12/8/03. LAST Status: Closed 12/4/03.
LUST UST	United Railroad Services - 3151 Nome	1929 ft SSE, Up-gradient 2 diesel tanks, now facility is closed
FINDS LUST RCRA NON-GEN	Matco (ProVans) 3263 Oakland	1961 ft SE, Up-gradient Tank facilities are reported as closed. No violations reported
LUST	Aurora Disposal 3995 Nome St.	2418 ft NNE. Cross-gradient LUST Status: Closed 10/25/96.
LUST UST AST LUST TRUST	Pemco Texaco 3558 Peoria St.	2440 ft E. Cross-gradient LUST Status: Closed 4/23/91. UST Status: Closed five tanks. AST Status: Closed one tank.
LUST	Sims Tire 3737 Peoria St.	2486 ft ENE. Cross-gradient Status: Closed 3/13/90.
LUST	Heart's Jiffy Stops 3351 Peoria St.	2564 ft ESE. Upgradient Status: Closed 10.26/90.

## **5.2 ADDITIONAL ENVIRONMENTAL RECORD SOURCES AND RESULTS**

File Review – Colorado Department of Labor and Employment Division of Oil and Public Safety (CDLE-OPS)

Sundance performed an on-line public records review of LUST sites located up- or cross-gradient from the subject property at CDLE-OPS and is summarized as follows:

**Frito Lay Inc. – 11645 E 37<sup>th</sup> Ave.** The site is located hydrogeologically cross-gradient approximately 500 feet from the subject property. Two events are listed with



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the online database, one No Further Action (NFA) letter was issued by CDLE-OPS on November 20, 1990 and the other NFA was issued on March 30, 1998. Groundwater monitoring was not required. Based on location, distance, and regulatory status the finding is not considered a recognized environmental condition.

**Flanagan Ready Mix – Sand Creek – 11400 33<sup>rd</sup> Ave.** The site is located hydrogeologically up-gradient approximately 650 feet from the subject property. Groundwater monitoring was not required and a NFA letter was issued by CDLE-OPS on November 23, 1998. Based on location, distance, and regulatory status the finding is not considered a recognized environmental condition.

**Nome Industrial Center – 3850 Nome St.** The site is located hydrogeologically cross-gradient approximately 1,100 feet from the subject property. No Further Action letter was issued by CDLE-OPS on February 14, 1997. Based on location, distance, and regulatory status the finding is not considered a recognized environmental condition.

**Matco (Pro Vans) – 3263 Oakland St.** The site is located hydrogeologically up-gradient approximately 1,200 feet from the subject property. Groundwater monitoring was not required and a No Further Action letter was issued by CDLE-OPS on April 15, 1995. Based on location, distance, and regulatory status the finding is not considered a recognized environmental condition.

**United Railroad Services – 3151 Nome St.** The site is located hydrogeologically up-gradient approximately 1,450 feet from the subject property. Groundwater monitoring was not required and a No Further Action letter was issued by CDLE-OPS on September 24, 2002. Based on location, distance, and regulatory status the finding is not considered a recognized environmental condition.

**Hearts Jiffy Stops – 3351 Peoria St.** The site is located hydrogeologically up-gradient approximately 1,950 from the subject property. A No Further Action letter was issued by CDLE-OPS on March 12 1993. Based on location, distance, and regulatory status the finding is not considered a recognized environmental condition.

**Sims Tire – 3737 Peoria St.** The site is located hydrogeologically cross-gradient approximately 2,100 feet from the subject property. Groundwater monitoring was not required and a No Further Action letter was issued by CDLE-OPS on April 20, 2000. Based on location, distance, and regulatory status the finding is not considered a recognized environmental condition.

**Pemco Texaco – 3558 Peoria St.** The site is located hydrogeologically cross-gradient approximately 2,300 feet from the subject property. A No Further Action letter was issued by CDLE-OPS on May 5, 1995. Based on location, distance, and regulatory status the finding is not considered a recognized environmental condition.

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File Review – Colorado Department of Public Health and Environment (CDPHE)

Sundance requested a public records listing of files at CDPHE located up- or cross-gradient from the subject property on September 26, 2009.

**Dow Chemical Magnesium Extrusion Facility-11380 E. Smith Rd.** This is the subject property which has operated as an industrial facility for decades. Industrial quantities of oils, solvents, metals, acids and PCBs were used and possibly spilled over the years. The “Phase II Investigation Report for the Dow Chemical Magnesium Extrusion Facility, Aurora, CO” prepared by URS Greiner Woodward Clyde and dated January 1999 (URS 1999) indicates soil and groundwater impacts of VOCs with concentrations below regulatory standards. A No Further Action letter was issued by CDPHE on February 9, 1999. Although the testing data does not indicate massive releases have occurred, the potential does exist due to long-term facility usage. Sundance believes that some additional testing of shallow soils, and Otis shop and fabrication area groundwater, are needed to limit the risk of “surprise” levels of impacts in these areas.

**Timminco Corporation-3555 Moline St.** This is the subject property which operated as an industrial facility following Dow Chemical and is listed as a RCRA small quantity generator, FINDS and AST site. Industrial quantities of machine and hydraulic oils, solvents, metals, and PCBs were used and possibly spilled over the years. The “Phase II Environmental Site Assessment” for Timminco by Walsh Environmental Scientists and Engineers, dated August 31, 2009 (Walsh 2009) was intended to mirror the URS 1999 report. TPH was detected in soil and at levels exceeding the 500 mg/kg screening threshold. However, VOCs, SVOCs, and metals were detected in soil and groundwater at concentrations below regulatory standards. This work tested the same areas as the URS 1999 effort, and therefore left the same areas untested as described above.

Freedom Environmental performed a Phase I for this property dated December 18, 2006. This report contains important property documentation information. No recognized environmental conditions were identified.

**SIA Aurora Treatment Plant - SIA at 33rd & Lima (a.k.a. SIA Dump @ 34th & Kingston Site)** The site is listed as a CERCLIS and a FINDS site located hydrogeologically cross-gradient, possibly up-gradient approximately 1,250 feet from the subject property. The dump was historically used as sewage treatment and disposal. The site has undergone the VCUP process through the CDPHE for corrective action of soil and groundwater contaminated with chlorinated hydrocarbons with the installation of a slurry wall and groundwater monitoring. Based on location, distance, and regulatory status the finding is not considered a recognized environmental condition.



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**Old Landfill Property, 11600 Smith Road**

Files were reviewed regarding this former landfill area approximately 150 feet east of subject property. File excerpts are attached to this report. Phase II activities were performed by others in 1999. Samples of soil and groundwater were taken. Low levels of metals and volatile organic chemicals were found in the soil. Low levels of dissolved metals and volatile organic chemicals were found in the groundwater. However, the levels were below State action levels. The State issued a No Further Action letter for the site on May 10, 1999.

**5.3 PHYSICAL SETTING SOURCES**

Site Photographs  
Current USGS Topographic Map  
Current Aerial Photograph  
Hydrologic Atlas (Robson 1996)

**5.4 BASIC HISTORICAL USE INFORMATION (PROPERTY AND ADJOINING)**

EDR USGS Topographic Maps

Year	Site	Adjoining
1901	Undeveloped	Area is undeveloped.
1957	Undeveloped	Undeveloped to east and south. Undeveloped to west. Railroad tracks appear to north. Sewage disposal plant exists farther south.
1965	Undeveloped	Undeveloped to east and south. Landfill appears to west. Railroad tracks appear to north.
1971	North on-site building appears	Undeveloped to east and south. Landfill appears to west. Railroad tracks appear to north.
1994	Both on-site buildings appear	Current buildings appear to east and south. Landfill appears to west. Railroad tracks appear to north.

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EDR Aerial Photographs

Year	Site	Adjoining
1963	No buildings are present. Land does not appear to be in use.	No buildings present. Railroad tracks appear to north. Open space appears to west with possible landfiling operations visible. Sewage treatment plant and lagoons appear further south.
1977	Both current buildings appear.	Current buildings appear to east and south, except for at southeast corner of Moline and Smith. Railroad tracks appear to north. Open space appears to west, with no evidence of landfiling operations. Sewage treatment plant lagoons are no longer observed.
1984	Both current buildings appear.	Current buildings appear to east and south. Railroad tracks appear to north. Open space appears to west.
1991	Both current buildings appear.	Current buildings appear to east and south. Railroad tracks appear to north. Open space appears to west.
1993	Both current buildings appear.	Current buildings appear to east and south. Railroad tracks appear to north. Open space appears to west.
2005	Both current buildings appear.	Current buildings appear to east and south. Railroad tracks appear to north. Open space appears to west.

EDR Sanborn Fire Insurance Maps

No Coverage.

EDR City Directories

Year	Site	Adjoining
1964	NL	NL
1969	NL	NL
1974	NL	NL
1979	NL	NL

## **5.5 REGULATORY RECORD SOURCES**



**Phase I Environmental Site Assessment  
Former Timminco Facility, 11380 Smith Road, Aurora, CO**

Adams County Assessor

Parcel: 0182326101032

Account #: R0093877.

Commercial Property Profile shows owner as Aurora Smith Road Ventures LLC.  
Legal Description: SUB: MORRIS HEIGHTS FILING NO. 2 AMENDED BLK: 18  
DESC: BEG AT NW COR BLK 18 TH S ALG W LN SD BLK 584/69 FT TH ELY  
ON ANG TO LEFT OF 90 D 471/235 FT TH NLY ON ANG TO LEFT OF 90 D  
536/545 FT TO NLY LN SD BLK TH NLY ON ANG TO LEFT OF 84 D 10 473/69  
FT TO POB EXC 30 FT.

Subdivision Plat: Morris Heights Filing No. 2 Amended.

Valuation Summary: Land Type is Commercial, with 5.7 acres of land area.

Building One Summary: Office Building, 8750 sf, built 1969.

Building Two Summary: Office Building, 69,471 sf, built 1969.

## **6 SITE RECONNAISSANCE**

### **6.1 METHODOLOGY AND LIMITING CONDITIONS**

On 9/18/09, SEC personnel inspected the property. Access was open for all areas.

### **6.2 GENERAL SITE SETTING**

The subject property is in an industrial/commercial area, with industrial/commercial buildings to the east and south, railway right-of-way to the north, and a closed landfill to the west. There is also a closed landfill approximately 150 feet east.

### **6.3 EXTERIOR OBSERVATIONS**

The two on-site buildings appear in variable physical condition. Most of the property is paved with asphalt for parking, or concrete for parking or storage. The property is mostly fenced. There is a gravel area to the west of the main building, and grass areas along the north of the property. Some oil stains exist on the pavement. There is no outdoor storage at this time. However, there is a stockpile of roadbase material and broken concrete on the west side. Some of the abandoned monitoring wells from prior investigations were observed. An electrical transformer on the west side of the main building was marked as containing no PCBs.

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Along the western fence, just north of the southern building, there appears to be an area where surface water flows off of the property. The ground is stained with oil on the outside of the fence for about 20 ft of the run-off ditch. There is a sewer manhole with unknown contents that may be for channeling water drainage to this area. There is an area on-property near here with a grey powder on the concrete, which may be ash or fines from a light-weight metal. No vents were observed that would indicate an underground storage tank was present.

## **6.4 INTERIOR OBSERVATIONS**

The office area at the north end of the north building was unoccupied. Some plans were found which were building construction drawings. There were some household cleaners still stored there. There was one, unlabelled "Home Depot" bucket in a closet that was half-full of an unknown liquid.

The main part of the north building was an unoccupied warehouse building. In limited areas, there was significant oil staining/residue on the floors, including near the machine shop/Otis Elevator area, near the 4200 ton press area, and in the fabrication area. There was some exposed insulation on pipes, as well as mercury vapor lamps. The former press pits and hydraulic trenches had been backfilled and concreted to grade. The building had been vacated, and swept up, but not cleaned of all metal and oil residues. Floor drains were not observed in these areas.

The south building was vacant. This former machine shop showed evidence of oil and grease accumulation and staining near the 1800 ton press and the oil skimmer room. Some spray-on insulation was loose on some walls. The former pits and trenches had been backfilled and concreted to grade. Floor drains were not observed.

Electrical transformers were located throughout the buildings. Those that appeared to contain oils were marked as no longer containing PCBs.

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Former Timminco Facility, 11380 Smith Road, Aurora, CO**

## **7 INTERVIEWS**

### **7.1 INTERVIEW WITH OWNER**

The owner of the property, Aurora Smith Road Ventures, LLC was interviewed as the User of this report, as described above in Section 4. The business owner, Timminco, was interviewed through three individuals, including Michael Still, Dan Hartman, and Jim Baker.

Michael Still, Comptroller, has been at the property for 3 years, and does not consider himself a key site manager for Phase I purposes. Dan Hartman and Jim Baker would be the most knowledgeable regarding production floor activities.

### **7.2 INTERVIEW WITH SITE MANAGER**

Dan Hartman has been an employee since 1998 when Timminco came to the property. He has been Director of Environmental Health and Safety for two years. Timminco has leased since 1998. Date of construction is unknown. Previous occupant was Dow, which operated as magnesium extrusion and fabrication facility. No known environmental conditions on site. No adverse administrative proceedings against property. Surrounding properties have included landfills. There are drums for fresh and used oil, and for hydrochloric acid. Some fill dirt was brought in for 4200 ton press to fill the pits. There is some oil staining in buildings. Wells were installed by URS and Walsh and are now abandoned. There was oil separator by the 1800 ton press. Solvents used were environmentally friendly. Most likely location of contamination would be by presses.

Jim Baker was maintenance lead for the previous occupant, Timminco, and has been working at the plant for 16 years. The primary oil usage was hydraulic oil (100 wt, 68 wt) for the presses. Oil storage tanks existed near the 4200 ton press, and in oil skimmer/oil storage room by the 1800 ton press. Other fabrication equipment used hydraulic oil in smaller vessels; no cutting oils were needed or used to cut the magnesium. Main hydraulic lines were in trenches, and the 4200 ton press was in a pit. The bottom of the pit is about 5 ft thick with reinforced concrete. If there was a significant leak, the oil could accumulate in the pit prior to being vacuumed up. The pits and trenches were filled with concrete when the shop was shut down. The “black staining” on the floor is not from magnesium or oil, but is worn areas of the “master plate” industrial floor, which has metal and glass in the concrete mix for durability.



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Solvents like “tri-chloride” were used to clean the oils from the equipment by spraying it on with a hand sprayer and wiping off. Some years ago the solvent used was changed to a “green” cleaner. Solvents were used in the maintenance shop, and the lab room. The former activities in the Otis Elevator sublet area are unknown.

Oil and solvents storage, other than in the oil ASTs, occurred in drums inside the oil skimmer room. Only empty drums were stored outside, on their sides. Some spillage is known to have occurred in the oil skimmer room. No outdoor oil spillage is reported. Liquids disposal was through Safety Clean and Clean Harbors.

The areas of higher spillage expectation are primarily in the oil skimmer room and by the 1800 ton press, and to a lesser extent beneath the 4200 ton press pit. The 1800 ton press was installed first, and did not have the high degree of containment that the 4200 ton press had. Care was taken not to allow magnesium metal fines to get into the waterways, because magnesium can be toxic to fish in Sand Creek.

### **7.3 INTERVIEW WITH OCCUPANTS**

See interviews with Timminco personnel above.

### **7.4 INTERVIEW WITH LOCAL GOVERNMENT OFFICIALS**

#### Aurora Fire Department

The office of Deputy Fire Marshal Bob Leigh, 303-326-899, states that no records were found concerning calls to the property for hazardous materials or spills.

#### Denver Dept. of Environmental Health

Dave Ericson, 720-865-5433, states that the landfill adjoining site to the west extended over to Havana Street. It is said to contain methane and municipal solid waste. Sundance believes that this landfill to the west is unlikely to affect the subject property with its current land usage because groundwater flow beneath this landfill is away from the subject property, and monitoring wells installed along the fence between the closed landfill and the subject property did not display significant impacts.

### **7.5 INTERVIEW WITH OTHERS**

Wayne White of Otis Elevator in Denver, 303-298-9300, says he has been with Otis for 30 years. He has no recollection of a facility near Smith and Moline.

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## **8 FINDINGS**

### **1. How was/is the property being used?**

The property appears to be undeveloped land until approximately 1969, when the main building was constructed. The Dow Chemical Magnesium Extrusion facility fabricated solid shape products there until 1986. From 1972-86, Otis Elevator maintained the machine shop area in a sub-lease arrangement with Dow. Timminco Corporation purchased the business from Dow around 1998, and continued the magnesium extrusion activities until they vacated the property in August 2009.

### **2. What substances were/are used on the property?**

The primary metal extruded at this site was magnesium, and no evidence of heavy metal usage was noted. Significant quantities of oil were used for the hydraulically-driven presses. Cleaning compounds have included chlorinated solvents in the past, but more recently “green” cleaners have been in use. Some acids have always been used to clean the dies.

The following substances were encountered during the site inspection: Sodium metasilicate, propylene glycol, Ultra-Sorb, Drano, paint, primer, sodium hydroxide, Syndegly low pH degreaser, and cleaner/degreaser solvents. Mercury vapor lamps were in evidence.

### **3. Were/are wastes managed or disposed there?**

The metal scraps and used oils were recycled. Solvents or oils disposal was through the disposal companies Safety Clean and Clean Harbors. Spent liquids storage occurred inside the buildings such as in the oil skimmer room. There was an outdoor storage area on the west side of the north building for empty oil drums.

### **4. What cleanup has been/is being conducted?**

There are no documented cleanups for this property. It appears that some of the electrical transformers have been flushed of their PCB oils, and it is assumed that these oils were disposed properly. In the oil skimmer room, it is evident that oils have been on the floor and subsequently cleaned up, such as with Ultra-Sorb.

### **5. Are there any engineering controls in place?**

None known.

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**6. Are there any institutional controls—restrictions on access or use?**

None known.

**7. Will/has contamination from nearby properties migrate(d) onto the property?**

No plumes were identified to be migrating onto this property.

## **9 OPINION**

This property has been used as a magnesium extrusion facility for 40 years, since the land was first developed in 1969. It has supported machine shop activities in multiple areas of the facility. Tanks of oil were required to operate the hydraulic press systems. Various cleaners, including chlorinated solvents and acids, have been used to clean the machinery and materials. Soil and groundwater testing has already been performed at this site over the past 10 years. Oils have been detected in soils, and chlorinated solvents have been detected at very low levels in soil and groundwater. These detections constitute a release of oils and solvents to the subsurface.

Based on the assessment reports of URS 1999 and Walsh 2009, the oil and solvent impacts detected would not require remediation by State regulators. Assessment work by Sundance in September 2009 has not yet been published. The URS 1999 report was submitted to The Colorado Department of Public Health and Environment for review, which resulted in a “no further action” designation for the facility. The NFA letter cautioned that this “does not relieve the property owner of liability or need for possible further actions should problems arise from contamination remaining on site.”

Sundance believes that the extent of oily contamination does appear to be limited based on the assessments performed by URS 1999 and Walsh 2009. However, they have not fully defined the extent of oils and solvents in the subsurface. Specifically, the extent of oily contamination has been shown to reach at least 12 ft below grade such as at URS test location DMW-08 by the 1800 ton press. Additionally, there is a large gap in groundwater testing between DMW-01 and DMW-04, downgradient of the fabrication area and the former Otis area where there has been obvious oil spillage and solvents usage in the past. These assessment efforts did not include sufficient shallow soil testing near the press and hydraulic line pits to evaluate for the presence of leaked oil in these areas. We consider 1) the undefined extent of oil-contaminated soil in multiple locations and 2) the unknown extent of solvents in groundwater in the Otis/fabrication areas to constitute recognized environmental conditions. We believe this warrants further soil and groundwater testing to verify that no significant impacts remain due to operations by a 40-year tenant who is vacating the property. In the absence of this testing, the property owner must be aware that a future tenant or owner may require this



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type of testing prior to taking responsibility for all potential environmental issues at this property.

## **10 CONCLUSIONS**

We have performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM practice E 1527-05 of the Former Timminco facility at 11380 Smith Road, City of Aurora, Adams County, Colorado, the property. Any exceptions to, or deletions from, this practice, are described in the Deviations section of this report. This assessment has revealed no evidence of recognized environmental conditions in connection with the property, except:

- Spillage of oil may have created soil impacts of unknown extent in multiple locations including by the 1800 ton press and oil skimmer room, by the 4200 ton press and fabrication area, by the former Otis sublet and maintenance area, and by the water runoff ditch along the western fence by the southern building.
- It has not been demonstrated that the groundwater near the Otis sublease and fabrication areas contain no impacts above State standards, although an “NFA” was granted for this issue in 1999.

Sundance is also identifying the following environmental concerns: (Environmental concerns could potentially have an impact on the site, but would be considered *de minimis* or out-of-scope under the ASTM Standard Practice. No further action or inquiry is recommended except as noted.)

- Tenant housekeeping should include the disposal of the liquid in the unlabeled Home Depot bucket in a janitor’s closet, the clean up of the free oil on the floor of the fabrication area, and the management of the grey ash/metallic powder by the NW corner outside the southern building, and the propane AST should be closed in the State records;
- There may be some PCBs remaining in the oils of the electrical transformers even though they appear to have been flushed many years ago, and PCBs may occur in other electrical equipment or lighting ballasts. Unless documentation of testing is available, this electrical equipment will require testing for PCBs and possible special handling when this equipment is upgraded in the future.

## **11 DEVIATIONS**

There have been no significant deviations from the ASTM Standard Practice E 1527-05 in performing this Phase I, except that the use of the land prior to that shown on the 1957 topographic map and the 1963 aerial photograph is estimated and not known for certain.

**Phase I Environmental Site Assessment  
Former Timminco Facility, 11380 Smith Road, Aurora, CO**

## **12 ADDITIONAL SERVICES**

No additional services have been contracted with Sundance regarding the subject property, except: Sundance is performing Phase II scoped to include shallow soil testing near oil staining areas.

## **13 REFERENCES**

ASTM 2005. Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process. ASTM Designation E 1527-05, ASTM International, 2005.

Freedom 2006. Phase I Environmental Site Assessment, Timminco Property. Prepared by Freedom Environmental, December 18, 2006.

Robson 1996. Geohydrology of the Shallow Aquifers in the Denver Metropolitan Area, Colorado. Hydrologic Investigations Atlas, S.G. Robson et al., U.S. Geological Survey, 1996.

URS 1999. Phase II Environmental Investigation, Dow Chemical Magnesium Extrusion Facility. Prepared by URS Greiner Woodward Clyde, January 21, 1999.

Walsh 2009. Phase II Environmental Site Assessment, Timminco. Prepared by Walsh Environmental Scientists and Engineers, LLC, August 31, 2009.

Also see the additional resource information documented in the appendix.

**Phase I Environmental Site Assessment  
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## **14 SIGNATURE OF ENVIRONMENTAL PROFESSIONAL**

Sundance Environmental Consultants, Inc. certifies and agrees that:

- 1) Sundance Environmental Consultants, Inc. has no present or contemplated interest in the property inspected.
- 2) Sundance Environmental Consultants, Inc. has no personal interest in or bias with respect to the subject matter of the assessment report or the participants to the sale. This environmental assessment report is not based in whole or in part upon the race, color, or national origin of the prospective owners or occupants of the property inspected, or upon the race, color or national origin of the present owners or occupants of the properties in the vicinity of the property inspected.
- 3) Sundance Environmental Consultants, Inc. has inspected the property, and has made an exterior inspection of all neighboring properties in the report. To the best of their knowledge and belief, all statements and information in this assessment report are true and correct, and they have not knowingly withheld any significant information.
- 4) All conclusions and opinions concerning the property assessed in this report were prepared by Sundance Environmental Consultants, Inc.

I declare that, to the best of my professional knowledge and belief, I met the definition of environmental professional as defined in Section 312.10 of 40 CFR 312. I have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. I have developed all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.



10/12/09

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Craig L. Dunning

-----  
Date



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## **15 QUALIFICATIONS OF ENVIRONMENTAL PROFESSIONAL**

Mr. Dunning has produced over 800 Phase I Environmental Site Assessments in the period dating from 1994 to the present. Mr. Dunning has a Master of Science degree in Environmental Engineering, along with a Bachelor of Engineering degree in Direct Energy Conversion. He developed the report format for Phase I Environmental Site Assessment for Advanced Enviro Services of Arvada, Colorado in 1994 from the first ASTM standards. Pertinent continuing education has included attended training sessions regarding EPA's new All Appropriate Inquiry requirements and the revised ASTM E1527-05 Phase I standard at the 2005 Brownfields Conference in Denver, CO.

## **16 APPENDICES**

### **16.1 SITE MAP**

Site Map  
Groundwater Flow Map

### **16.2 SITE PHOTOGRAPHS**

### **16.3 HISTORICAL RESEARCH DOCUMENTATION**

EDR Historical Topographic Map Report  
EDR Aerial Photo Decade Package

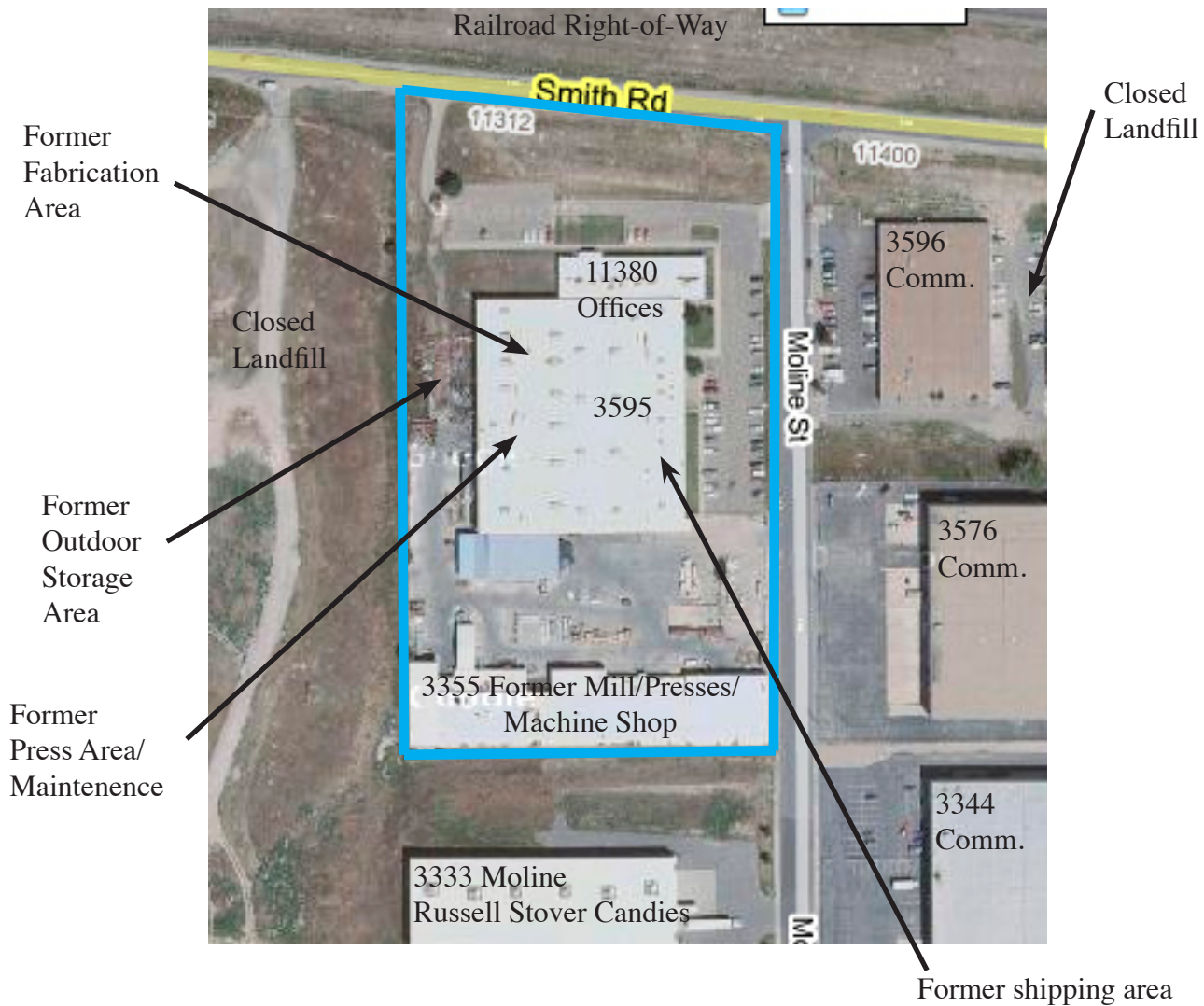
### **16.4 INTERVIEW DOCUMENTATION**

Previous Site Manager Interviews  
User Questionnaire

### **16.5 REGULATORY RECORDS DOCUMENTATION**

Excerpts from report file copies  
EDR Radius Report

# SITE MAP: 11380 Smith Road



# Groundwater Flow Direction Map

## 11380 Smith Road, Aurora, CO

(Taken from Robson, 1996)





# Adjoining Properties to 11380 Smith Road



East-adjointing commercial building looking southeast from corner of Smith and Moline.



South-adjointing Russell-Stover Candies looking southwest from Moline Street.



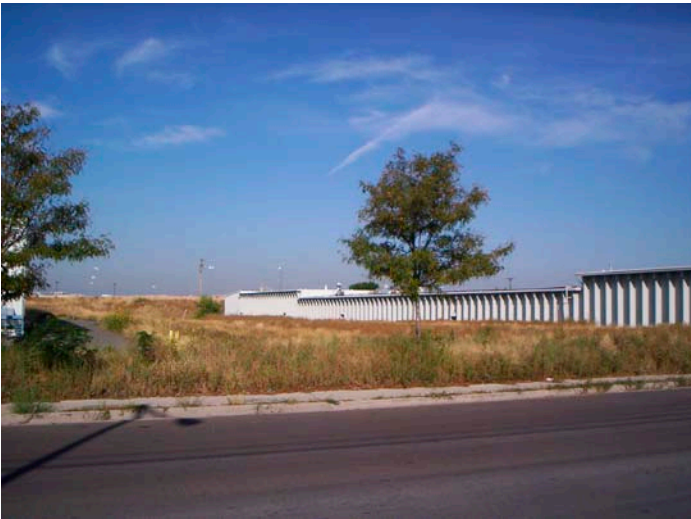
North-adjointing railroad right-of-way looking northwest from corner of Smith and Moline.



West-adjointing closed landfill area looking to the southeast.



# Exterior View of 11380 Smith Road



Looking west from Moline along the south side of the south building on the property.



Looking west from Moline along the north side of the south building on the property.



Looking west from Moline along the south side of the north building on the property.



Looking south from Smith Road at the north side of the office area on north building.



Water outflow with oil staining along west border fence.



Former drum storage area on west side of the main building.



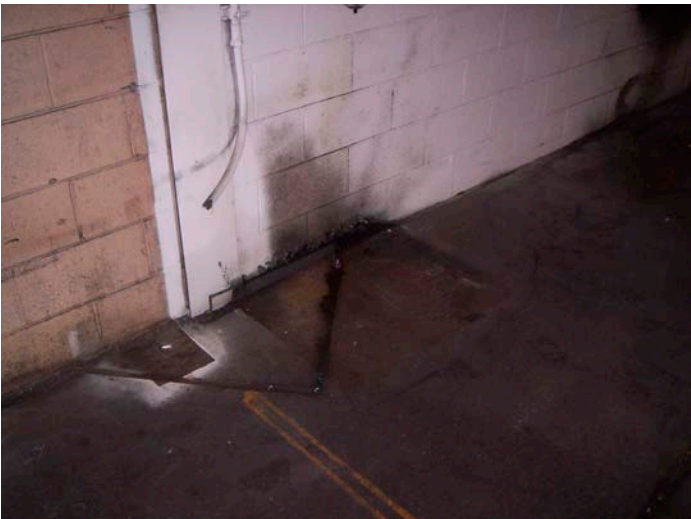
# Interior Views of 11380 Smith Road



Example of exposed pipe insulation.



Storage of household cleaners and a container of cleaner/degreaser.



Metal particles and oil staining in fabrication area.



Oil puddles in fabrication area.



Mercury vapor lights illuminate room with extensive exposed insulation in south building.



Air-compressor and other equipment remain in oil skimmer room.



## More Interior Views of 11380 Smith Road



Oily floor in oil skimmer room of south building.



Utility area with oil staining.



Oil line trenches in press area of main building, backfilled & covered with concrete.



Example of cracked floor with oil staining in oil skimmer room of south building.



Area where the 4,200 ton press extruded magnesium ingots into poles in main building.



Looking through the south building, which was a machine shop and press room.



**11380 Smith Rd**

11380 Smith Rd

Aurora, CO 80010

Inquiry Number: 2595303.5

September 21, 2009

## The EDR Aerial Photo Decade Package

# EDR Aerial Photo Decade Package

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDRs professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

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with any questions or comments.

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**Date EDR Searched Historical Sources:**

Aerial Photography September 21, 2009

**Target Property:**

11380 Smith Rd

Aurora, CO 80010

<u><i>Year</i></u>	<u><i>Scale</i></u>	<u><i>Details</i></u>	<u><i>Source</i></u>
1963	Aerial Photograph. Scale: 1"=750'	Panel #: 2439104-G7/Flight Date: June 29, 1963	EDR
1977	Aerial Photograph. Scale: 1"=750'	Panel #: 2439104-G7/Flight Date: June 05, 1977	EDR
1984	Aerial Photograph. Scale: 1"=1000'	Panel #: 2439104-G7/Flight Date: October 13, 1984	EDR
1991	Aerial Photograph. Scale: 1"=750'	Panel #: 2439104-G7/Flight Date: June 11, 1991	EDR
1993	Aerial Photograph. Scale: 1"=750'	Panel #: 2439104-G7/Flight Date: June 27, 1993	EDR
2005	Aerial Photograph. 1" = 604'	Flight Year: 2005	EDR



**INQUIRY #:** 2595303.5

**YEAR:** 1963

| = 750'







INQUIRY #: 2595303.5

YEAR: 1977

| = 750'







**INQUIRY #:** 2595303.5

**YEAR:** 1984

| = 1000'





INQUIRY #: 2595303.5

YEAR: 1991

| = 750'







INQUIRY #: 2595303.5

YEAR: 1993

| = 750'







**INQUIRY #:** 2595303.5

**YEAR:** 2005

| = 604'







**11380 Smith Rd**

11380 Smith Rd

Aurora, CO 80010

Inquiry Number: 2595303.4

September 18, 2009

## The EDR Historical Topographic Map Report

# EDR Historical Topographic Map Report

Environmental Data Resources, Inc.s (EDR) Historical Topographic Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topographic Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the early 1900s.

***Thank you for your business.***  
Please contact EDR at 1-800-352-0050  
with any questions or comments.

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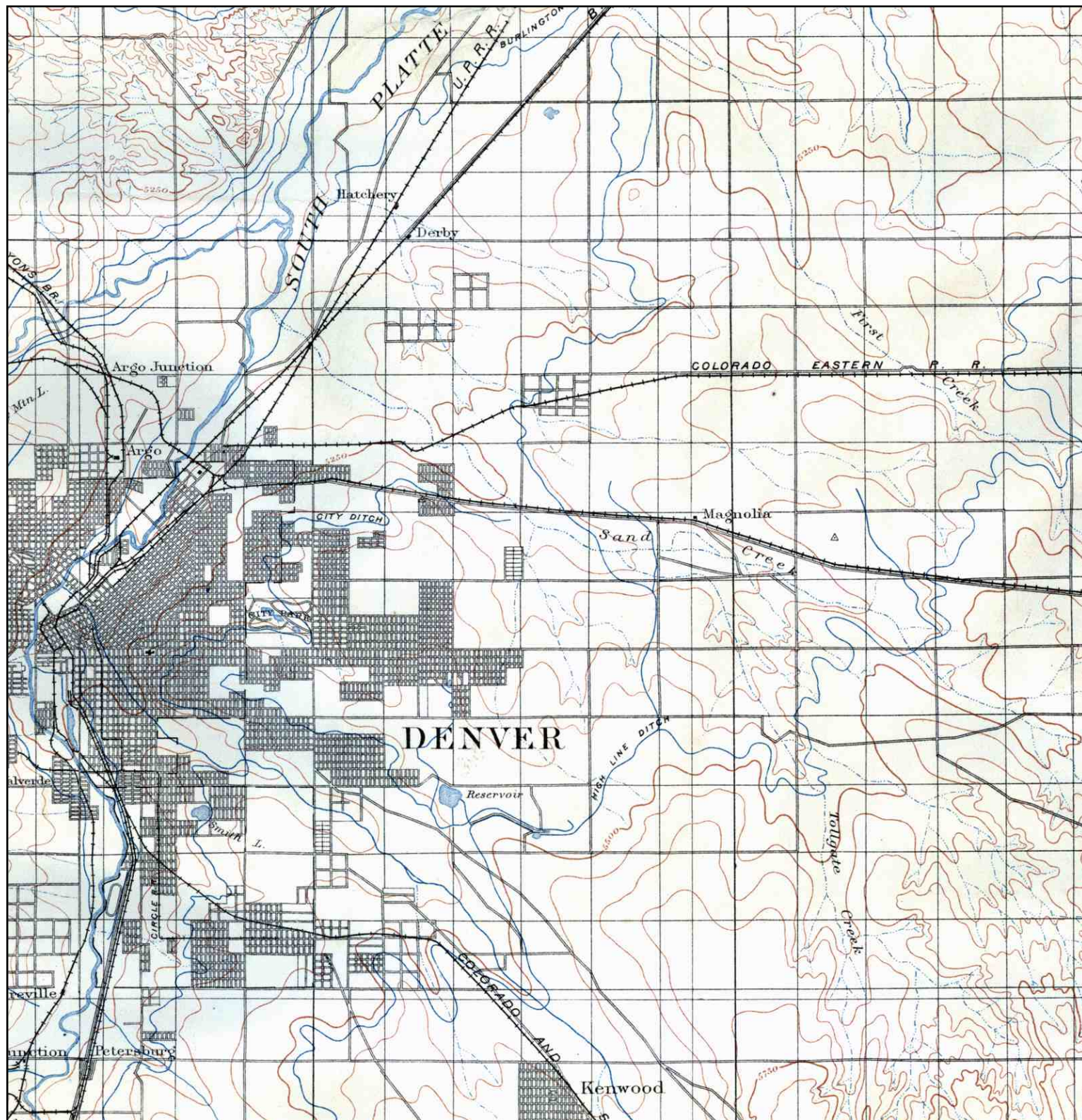
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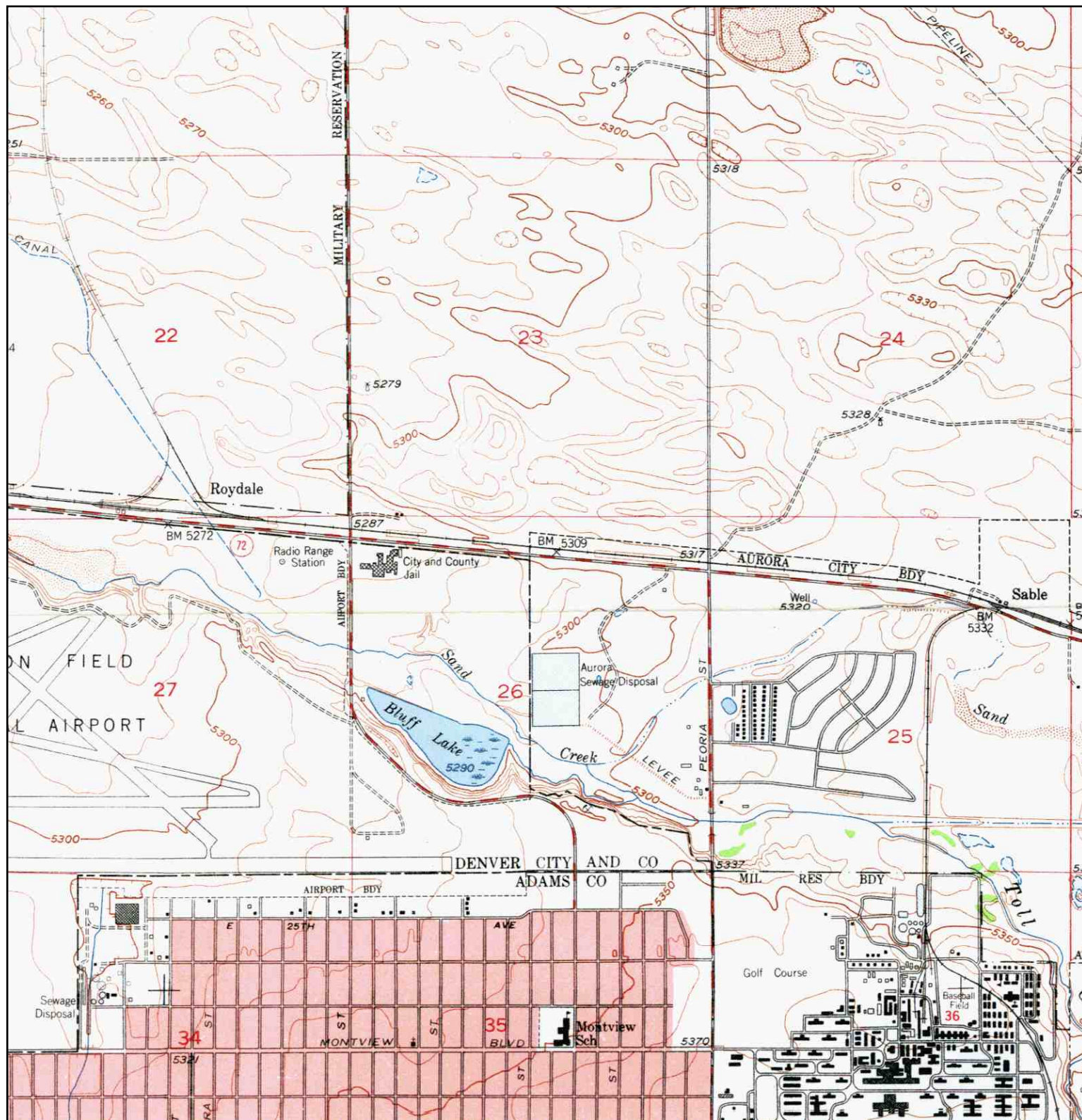
# Historical Topographic Map




	TARGET QUAD	SITE NAME:	11380 Smith Rd	CLIENT:	Sundance Env. Consultants, Inc.
	NAME: DENVER	ADDRESS:	11380 Smith Rd	CONTACT:	Craig Dunning
	MAP YEAR: 1901		Aurora, CO 80010	INQUIRY#:	2595303.4
		LAT/LONG:	39.7669 / 104.855	RESEARCH DATE:	09/18/2009
	SERIES: 30				
	SCALE: 1:125000				



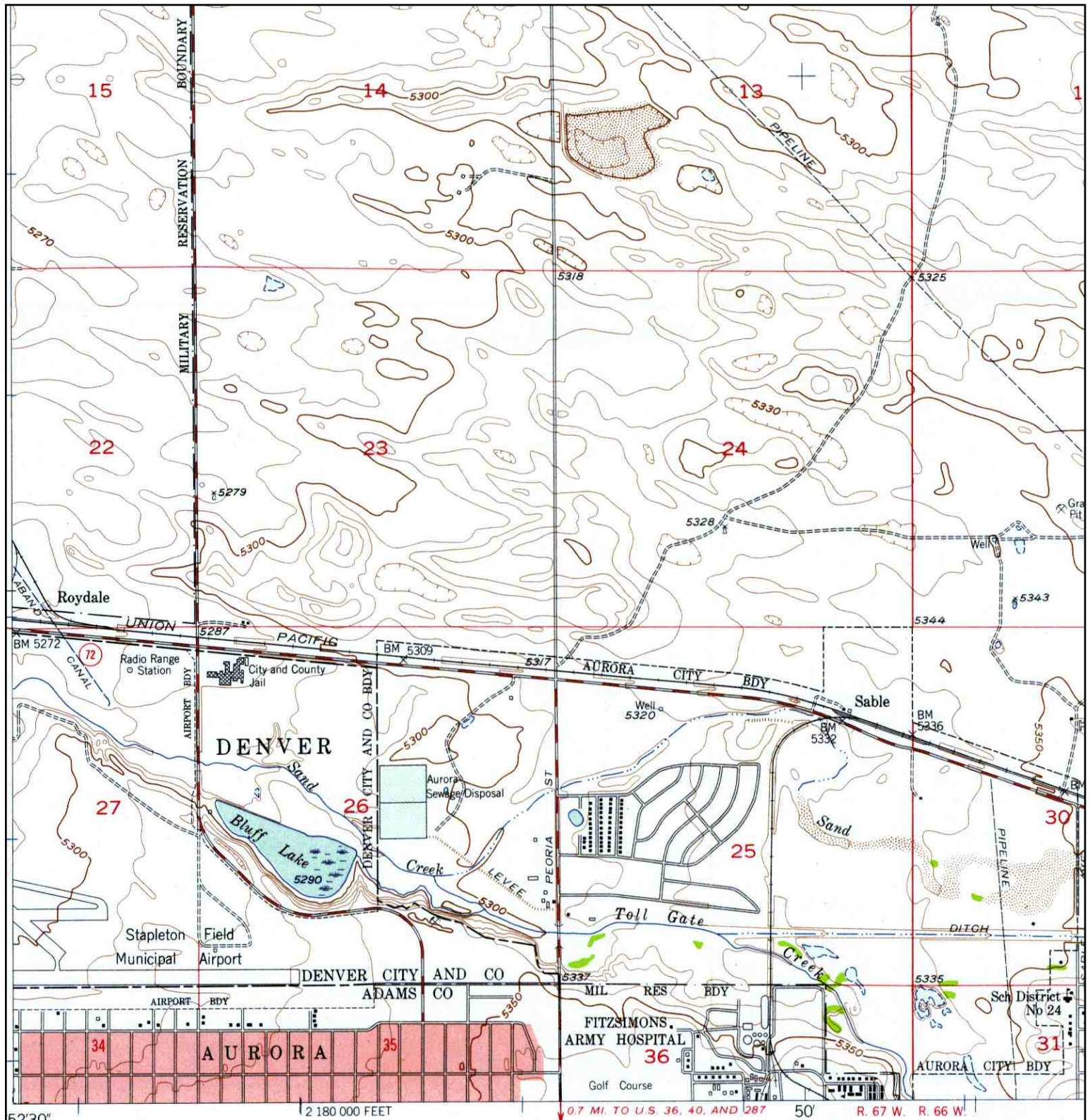
# Historical Topographic Map



	TARGET QUAD	SITE NAME:	11380 Smith Rd	CLIENT:	Sundance Env. Consultants, Inc.
	NAME: DENVER VICINITY NE	ADDRESS:	11380 Smith Rd	CONTACT:	Craig Dunning
	MAP YEAR: 1957		Aurora, CO 80010	INQUIRY#:	2595303.4
		LAT/LONG:	39.7669 / 104.855	RESEARCH DATE:	09/18/2009
	SERIES: 7.5				
	SCALE: 1:24000				



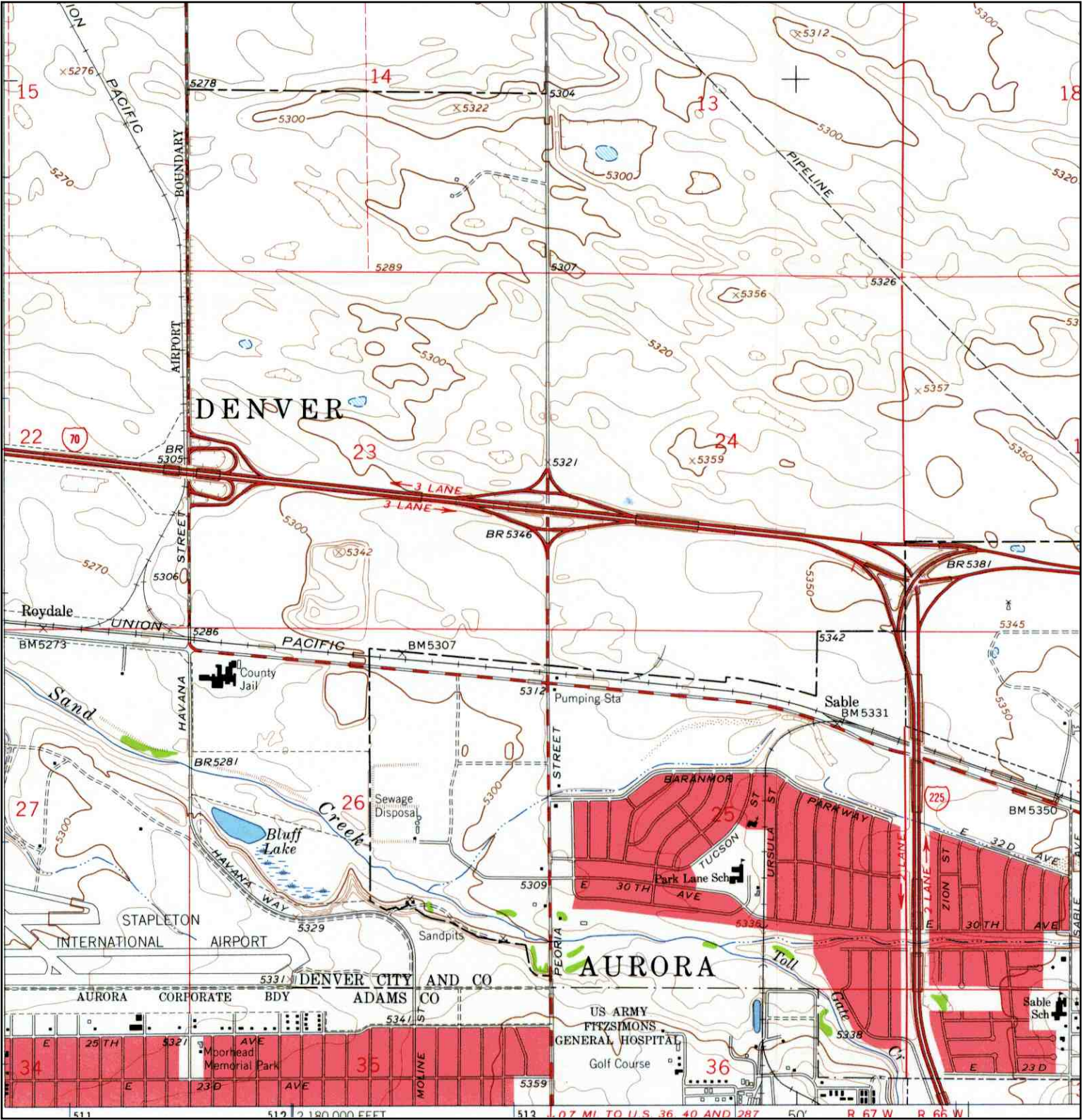
# Historical Topographic Map




<p>N ↑</p>	<p>TARGET QUAD NAME: SABLE MAP YEAR: 1957</p> <p>SERIES: 7.5 SCALE: 1:24000</p>	<p>SITE NAME: 11380 Smith Rd ADDRESS: 11380 Smith Rd Aurora, CO 80010 LAT/LONG: 39.7669 / 104.855</p>	<p>CLIENT: Sundance Env. Consultants, Inc. CONTACT: Craig Dunning INQUIRY#: 2595303.4 RESEARCH DATE: 09/18/2009</p>
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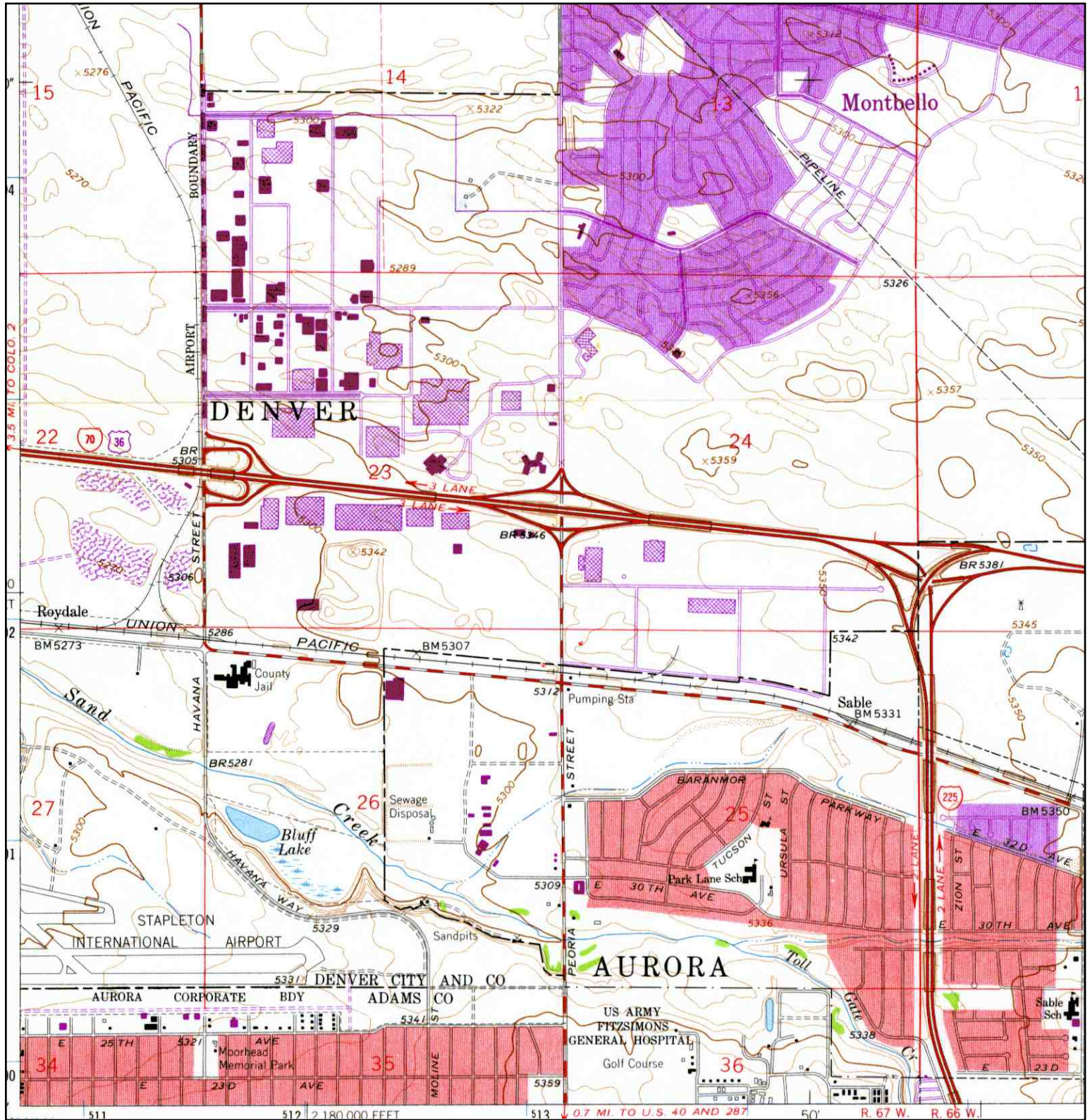
Historical Topographic Map



	TARGET QUAD	SITE NAME:	11380 Smith Rd	CLIENT:	Sundance Env. Consultants, Inc.
	NAME: SABLE	ADDRESS:	11380 Smith Rd	CONTACT:	Craig Dunning
	MAP YEAR: 1965		Aurora, CO 80010	INQUIRY#:	2595303.4
	SERIES: 7.5	LAT/LONG:	39.7669 / 104.855	RESEARCH DATE:	09/18/2009
	SCALE: 1:24000				



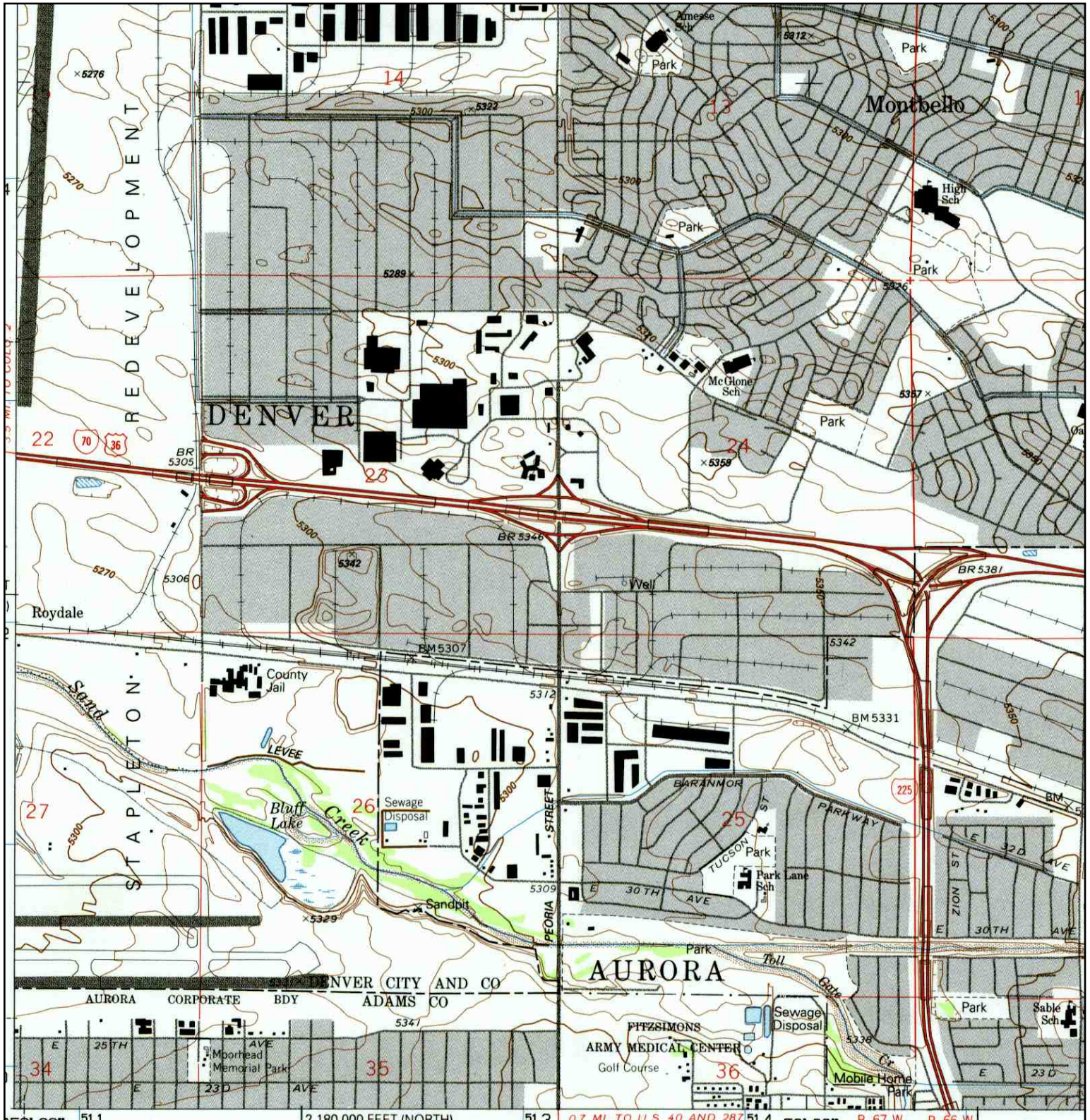
# Historical Topographic Map



<p>N ↑</p>	<p>TARGET QUAD NAME: SABLE MAP YEAR: 1971 PHOTOREVISED FROM: 1965 SERIES: 7.5 SCALE: 1:24000</p>	<p>SITE NAME: 11380 Smith Rd ADDRESS: 11380 Smith Rd Aurora, CO 80010 LAT/LONG: 39.7669 / 104.855</p>	<p>CLIENT: Sundance Env. Consultants, Inc. CONTACT: Craig Dunning INQUIRY#: 2595303.4 RESEARCH DATE: 09/18/2009</p>
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# Historical Topographic Map



<p>N ↑</p>	<p>TARGET QUAD NAME: MONTBELLO MAP YEAR: 1994 REVISED FROM: 1965 SERIES: 7.5 SCALE: 1:24000</p>	<p>SITE NAME: 11380 Smith Rd ADDRESS: 11380 Smith Rd Aurora, CO 80010 LAT/LONG: 39.7669 / 104.855</p>	<p>CLIENT: Sundance Env. Consultants, Inc. CONTACT: Craig Dunning INQUIRY#: 2595303.4 RESEARCH DATE: 09/18/2009</p>
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**Sundance Environmental Consultants, Inc.**  
11584 Wilson Circle, Parker, Colorado 80134  
T: (303) 699-7870 F: (303) 680-3192

## **ASTM E 1527-05 Phase I ESA User Questionnaire**

### **Page 1 of 3**

Instructions to **OWNER** Please complete this form immediately, to the best of your knowledge at this time, and return to Sundance. This information is very important for Sundance to complete a high-quality Phase I in a timely and cost-effective manner. Most of this information is specifically required to be provided by the user, according to the ASTM E 1527-05 Standard Practice for a Phase I Environmental Site Assessment.

Site/Property Address: **11380 Smith Road / 3555 Moline Street, Aurora CO 80010**

**Owner** Name (often a company): **Aurora Smith Road Ventures, LLC**

**Owner** Contact Name: **David B. Goodell**

**Owner** Address (for mailing completed report): **P. O. Box 609 Del Mar, CA 92014**

Contact Phone: **858 481-2626 ext 104 Fax: 858 481-9920 Cell: 619 823-7788**

Name of person completing questionnaire / date: **David Goodell 9/18/09**

Names / contact information for knowledgeable persons regarding the property?  
(like previous owner, current owner, property manager, current occupants)

**Tenant: Timminco**

**Controller: Magnesium Division - Tel: 303 261 2036**

**Michael Still**

**Still, Michael**

**E-mail Address(es):**

**MStill@timminco.com**

**Plant Manager: Jim Baker Baker, Jim**

**E-mail Address(es):**

**JBaker@Timminco.com**

Is a site map or property survey available? **YES**

Are any environmental reports available, such as a previous Phase I or site assessment reports?

**YES**

If these items are available, please name and provide. Previous Phase I (**ALREADY PROVIDED**)

What is the reason that the user is performing this Phase I? **Tenant left the property and owner needs to make sure there are no environmental problems.**

**ASTM E 1527-05 Phase I ESA User Questionnaire**  
**Page 2 of 3**

What is the anticipated use of property by the user/new owner? **No idea – we are in the process of trying to release the property.**

Will any remodeling, demolition, or soil excavation be required for future property use? **Don't know**

The user may want to consider evaluating several items in connection to commercial real estate which are beyond the scope of an ASTM E 1527-05 Phase I, including but not limited to: asbestos-containing building materials, radon, lead-based paint, lead in drinking water, wetlands, regulatory compliance, cultural and historic resources, industrial hygiene, health and safety, ecological resources, endangered species, indoor air quality, biological agents, and mold. Sundance can subcontract others for the performance of this work, if desired.

The user should be aware that review of recorded land title records and judicial records for environmental liens or activity and use limitations is outside the scope of an ASTM Phase I. The user should engage a title company or title professional to undertake these reviews, or have Sundance subcontract this work. Are any title records available that you would like Sundance to review?

1. Are you aware of any environmental cleanup liens against the property that are filed or recorded under federal, tribal, state or local law? **No**

2. Are you aware of any activity and land use limitations (AULs), such as engineering controls, land use restrictions or institutional controls that are in place at the site and/or have been filed or recorded in a registry under federal, tribal, state or local law? **No**

3. As the OWNER of this ESA do you have any specialized knowledge or experience related to the property or nearby properties? For example, are you involved in the same line of business as the current or former occupants of the property or an adjoining property so that you would have specialized knowledge of the chemicals and processes used by this type of business? **NO**

4. Does the purchase price being paid for this property reasonably reflect the fair market value of the property? If you conclude that there is a difference, have you considered whether the lower purchase price is because contamination is known or believed to be present at the property? **NA**

**ASTM E 1527-05 Phase I ESA User Questionnaire**  
**Page 3 of 3**

5. Are you aware of commonly known or reasonably ascertainable information about the property that would help the environmental professional to identify conditions indicative of releases or threatened releases? For example, as **OWNER:**

a) Do you know the past uses of the property? **YES**

b) Do you know of specific chemicals that are present or once were present at the property? **Oil and Hydraulic fluid.**

c) Do you know of spills or other chemical releases that have taken place on the property? **Seems to be quite a bit of accumulated oil and hydraulic fluid in some areas.**

d) Do you know of any environmental cleanups that have taken place at the property? **No**

6. As the OWNER of this ESA, based on your knowledge and experience related to the property are there any obvious indicators that point to the presence or likely presence of contamination at the property? **SEE 5c**

**Completed form may be faxed back to Sundance at fax (303) 680-3192.**



## Telephone Conversation Record

Date: September 21, 2009

From: Robin Fryberger, Sundance Environmental

To: Jim Baker, Maintenance Lead, Timminco Smith Road Facility

Re: Interview Regarding Maintenance at Facility for Phase I

Jim Baker worked at the facility for 16 years. The facility operated here for about 40 years in all. He is knowledgeable of the manufacturing processes and materials storage. He is now associated with the new facility in Mexico.

Primary oil usage was hydraulic oil (100 wt, 68 wt) for the presses. Oil storage tanks existed near the 4200 ton press, and in oil skimmer/oil storage room by the 1800 ton press. Other fabrication equipment used hydraulic oil in smaller vessels; no cutting oils were needed or used to cut the magnesium. Main hydraulic lines were in trenches, and the 4200 ton press was in a pit. The bottom of the pit is about 5 ft thick reinforced concrete. If there was a significant leak, the oil could accumulate in the pit prior to being vacuumed up. The pits and trenches were filled with concrete when the shop was shut down. The “black staining” on the floor is not from magnesium or oil, but is worn areas of the “master plate” industrial floor, which has metal and glass in the concrete mix for durability.

Solvents like “tri-chloride” were used to clean the oils from the equipment by spraying it on with a hand sprayer and wiping off. Some years ago the solvent used was changed to a “green” cleaner. Solvents were used in the maintenance shop, and the lab room. Jim Baker is not aware of what the former activities were in the Otis Elevator sublet area.

Oil and solvents storage, other than in the oil ASTs, occurred in drums inside the oil skimmer room. Only empty drums were stored outside, on their sides. Some spillage is known to have occurred in the oil skimmer room. No outdoor oil spillage is reported. Liquids disposal was through Safety Clean and Clean Harbors.

The areas where Jim Baker would have a higher expectation of spillage to be detected are primarily in the oil skimmer room and by the 1800 ton press, and to a lesser extent beneath the 4200 ton press pit. The 1800 ton press was installed first, and did not have the high degree of containment that the 4200 ton press had. When asked about outdoor metallic materials storage practices, Mr. Baker indicated that care was taken not to allow magnesium metal fines to get into the waterways, because magnesium can be toxic to fish in Sand Creek.

# SUNDANCE ENVIRONMENTAL CONSULTANTS, INC.

## INTERVIEW FORM

Location of Property: 11380 Smith Road, Aurora, CO 80010

Date of Interview: 9/29/09

Interviewer: Robin Fryberger

Name of Subject: Dan Hartman-Director of Environmental health and Safety, Security and Quality, with Rob Assal-Legal Counsel

Relationship to Property: Employee since 1998 when Timminco came to property, have been EH&S Director for 2 years

Phone: 303 367 0960 x 215

### Introductory Questions

How long have you owned this property? Timminco has leased since 1998

When were the on-site buildings constructed? Unknown

Do you know who the previous owners or occupants were? Dow operated a plant as a magnesium extrusion and fabrication facility

Is there a key site manager? Myself, also Ken Anderson, Charlie Yarborough, Michael Still

Are site plans available? Plans left in conference room

Do you have any reason to suspect that environmental conditions exist on the site? None that I know of

### Administrative Proceedings

Do you know of any pending, threatened or past litigation or administrative proceedings against the property? NO Do you know of anything relevant to hazardous substance or petroleum products on the property? NO – we are not currently on property

Do you know of any notices from any governmental entity concerning environmental liens against the property? NO Do you know of any notices concerning hazardous substances or petroleum products or other possible liability? NO

### Helpful Documents

Are any of these documents available?

Environmental Site Assessments URS 1999, Walsh 2009, Freedom Phase I 2006, will provide Walsh 2009 data sheets

Hydrogeologic Condition Reports Not that I know of

Surrounding Area Reports Not that I know of

Environmental Audit Reports Yes – SQG Audit by CDPHE 2/20/08 – will provide

Environmental Permits Yes, had stormwater permit

Solid Waste Disposal Permits Not that I know of

Hazardous Waste Disposal Permits Yes, manifests

Wastewater Permits Not that I know of

NPDES Permits NO; may have stormwater management plans

Storage Tank Registrations (UST, AST) Not that I know of

Material Safety Data Sheets (MSDS) Yes, esp for Mg and other elements in alloys

Community Right-To-Know Plans Not sure

Safety Plans Yes, plant safety rules, lock-out tag-out, storm/fire

Hazardous Waste Generator Notices, Reports, Permits Yes, manifests

Geotechnical Reports Not that I know of

### Environmental Conditions

Has the property or any adjoining property had an industrial use? Yes, magnesium extrusion and fabrication plant; surrounding properties include empty bldgs and prison

Property or adjoining property been used for: Gas Station, Motor Repair, Commercial Printing, Dry Cleaners, Photo Lab, Junkyard, Landfill on prison property, or Waste Treatment – Not that I know of for group of questions

Any industrial 55-gallon drums or sacks of chemicals? Used 55-gal drums for fresh and used oil, used 30-40 gal drums for hydrochloric acid

Any fill dirt brought in? Yes, to fill 4200 ton press pit

Any pits, ponds or lagoons for waste treatment or disposal? Not that I know of

Any stained soil? Not that I know of

Any storage tanks above or underground? Not that I know of

Any vent pipes or other pipes coming out of the ground or a building? Not that I know of

Any staining in buildings other than from water? Yes, from oil

Any foul odors? Not that I know of



Any wells on-site, and if so any contaminants identified? Wells were installed by URS and Walsh that are now abandoned, see reports

Other:

Any documentation of PCB oil testing or changeouts for transformers? Not sure

Any separators? Yes, by the 1800 ton press

Any info on activities in the Otis Elevator sublet area? Not that I know of

Any solvents used? NO, company uses orange solvents that are environmentally friendly

What places would contamination most likely be detected if present? By the former presses, see the test locations in the previous reports

Action Items:

Sundance to provide copy of completed interview form

Rob Assal to provide 2/20/08 SQG audit info and Walsh 2009 data sheets

## **Telephone Conversation Record**

Date: October 5, 2009

From: Robin Fryberger, Sundance Environmental

To: Michael Still, Comptroller for Timminco Smith Road Facility

Re: Questions Regarding Timminco Facility for Phase I

Michael Still was contacted as a knowledgeable person regarding the Timminco facility on Smith Road, as suggested by Mr. David Goodell. Mr. Still has worked at the facility since 2006 as the comptroller. Michael Still does not consider himself a key site manager for Phase I questionnaire purposes. He indicates that Dan Hartman and Jim Baker would have the most knowledge of plant production floor activities. He is not aware of anyone more knowledgeable regarding the Otis Elevator sublet activities.

# STATE OF COLORADO

Bill Ritter, Jr., Governor  
James B. Martin, Executive Director

Dedicated to protecting and improving the health and environment of the people of Colorado

4300 Cherry Creek Dr. S.      Laboratory Services Division  
Denver, Colorado 80246-1530      8100 Lowry Blvd.  
Phone (303) 692-2000      Denver, Colorado 80230-6928  
TDD Line (303) 691-7700      (303) 692-3090  
Located in Glendale, Colorado  
<http://www.cdphe.state.co.us>



Colorado Department  
of Public Health  
and Environment

February 27, 2008

Mr. Daniel Hartman, Environmental Health and Safety Manager  
Timminco Corporation  
3595 Moline Street  
Aurora, CO 80010

**Subject:      Inspection Report for the February 20, 2008 Compliance Inspection  
EPA Identification Number COD030446637**

Dear Mr. Hartman:

On February 20, 2008 an inspector from the Colorado Department of Public Health and Environment, Hazardous Materials and Waste Management Division (the Division) conducted a compliance inspection at Timminco Corporation. Based upon observations made at the time of the inspection, it appears that although your facility was operating as a Conditionally Exempt Small Quantity Generator on the day of the inspection, the facility is an episodic Small Quantity Generator and is operating in compliance with the requirements applicable to a Small Quantity Generator of hazardous waste. Therefore, the Division is hereby closing the referenced compliance inspection and does not intend to take any action on this matter at this time.

For your information, I have attached a copy of the inspector checklist, which serves as the report for the above referenced inspection. Please contact me at (303) 692-3429 if you have any questions regarding this matter.

Sincerely,

Beth Ann Williams  
Hazardous Waste Compliance Unit

copies to:  
Case File # COD030446637  
Randy Lamdin, EPA



# **SMALL QUANTITY GENERATOR (SQG) INSPECTOR SELF-CERTIFICATION CHECKLIST**

**Company Name:** Timminco Corp **EPA ID#:** COD030446637

**Company Street Address:** 3595 Moline Street

**City:** Aurora **State:** CO **Zip:** 80010

**Company Contact:** Dan Hartman **Telephone:** 303-343-8667 ext: 215

**Business Owner:** Timminco Corp **Owner Telephone:** 303-343-8667

**Primary Products or Services:** Magnesium extruded and fabricated products

**Number of Employees:** 70 **Hours of Operation:** 7-4: M-F **Years at This Location:** 30+

**Today's Date:** 02/20/08 **Inspection Type:** Random ☒ Non-Responder ☐ Other ☐

**INSTRUCTIONS FOR SECTION A**

- Mark **YES** if you are in compliance
- Mark **NO** if you are out of compliance. If you answer **NO**, write in the **DATE FIXED** indicating the date that you corrected or will correct the violation.
- If the question is not applicable write "N/A"

A.	General <i>Checklist Guidance Document pages 1 → 6 and Appendix A and Appendix B</i>	YES	NO	DATE FIXED or N/A
1.	Has your facility determined what wastes generated at your facility are hazardous wastes and which wastes are not hazardous wastes? 6 CCR 1007-3, section 262.11	<input checked="" type="radio"/>	<input type="radio"/>	
2.	Does the physical address at your facility match the address associated with your EPA Identification Number? 6 CCR 1007-3, Part 99 and section 262.12	<input checked="" type="radio"/>	<input type="radio"/>	
3.	Does your facility generate used oil? Used oil is not counted as a hazardous waste but is regulated. (If you answer "No," it is not a violation.) 6 CCR 1007-3, Part 279	<input checked="" type="radio"/>	<input type="radio"/>	N/A
4.	Does your facility generate less than 2200 pounds of hazardous waste and/or less than 2.2 pounds of acutely hazardous waste in every calendar month of the year? 6 CCR 1007-3, section 262.34(d)	<input checked="" type="radio"/>	<input type="radio"/>	
5.	Does your facility have less than about thirty 55-gallon drums (or less than 13,200 pounds) on site at any one time? 6 CCR 1007-3, section 262.34(d)(1)	<input checked="" type="radio"/>	<input type="radio"/>	
6.	Does your facility use a transporter that is authorized to transport hazardous waste? 6 CCR 1007-3, section 262.12(c)	<input checked="" type="radio"/>	<input type="radio"/>	
7.	Does your facility dispose of all hazardous waste through a permitted treatment, storage and disposal facility? This would include such wastes as spent solvent, water treatment sludge, etc. 6 CCR 1007-3, section 100.10 If not, please explain: _____ _____	<input checked="" type="radio"/>	<input type="radio"/>	

**SMALL QUANTITY GENERATOR (SQG)  
INSPECTOR SELF-CERTIFICATION CHECKLIST**

A.	General <i>Checklist Guidance Document pages 1 → 6 and Appendix A and Appendix B</i>	YES	NO	DATE FIXED or N/A
8.	Does your facility ensure that no hazardous waste is disposed of on the ground, sanitary sewer, storm drains, bodies of water, or trash? 6 CCR 1007-3, section 100.10	<input checked="" type="radio"/>	<input type="radio"/>	
9.	Does your facility use any hazardous waste tanks? If so, please refer to the Guide to the Colorado Hazardous Waste Regulations, page 30. (If you answer "No," it is not a violation.) 6 CCR 1007-3, section 265.201 and Subpart J of 265	<input type="radio"/>	<input checked="" type="radio"/>	N/A
10.	Does your facility perform any evaporation, compaction, or any other on-site treatment of hazardous waste? (If you answer "No," it is not a violation.) 6 CCR 1007-3, sections 260.10 and 110.10	<input type="radio"/>	<input checked="" type="radio"/>	N/A

**INSTRUCTIONS FOR SECTION B**

List all hazardous waste generated at your facility in the space provided below. Also indicate if your waste is a universal waste and/or if it is recycled, what waste codes apply, if any, and how much you generate each month. Be sure to write in the quantity of waste and specify whether the quantity is in gallons or pounds.

B.	Waste Stream Description <i>For more information go to the Checklist Guidance Document page 7 and Appendix A for waste codes</i>	Recycled and/or Universal Waste?		Hazardous Waste Code(s) (if applicable).	Approximate Amount Generated Each Month
		Yes	No		
1.	Tetrachloroethylene	<input type="radio"/>	<input checked="" type="radio"/>	D001/F002	20 pounds
2.	Nitric Acid/ Acidic Acid	<input type="radio"/>	<input checked="" type="radio"/>	D002	20 pounds
3.	Chromic Acid	<input type="radio"/>	<input checked="" type="radio"/>	D002	10 pounds
4.	Hydrochloric Acid	<input type="radio"/>	<input checked="" type="radio"/>	D002	170 pounds
5.		<input type="radio"/>	<input type="radio"/>		
6.		<input type="radio"/>	<input type="radio"/>		
7.		<input type="radio"/>	<input type="radio"/>		
8.		<input type="radio"/>	<input type="radio"/>		
9.		<input type="radio"/>	<input type="radio"/>		
10.		<input type="radio"/>	<input type="radio"/>		
11.		<input type="radio"/>	<input type="radio"/>		
12.		<input type="radio"/>	<input type="radio"/>		
13.		<input type="radio"/>	<input type="radio"/>		
14.		<input type="radio"/>	<input type="radio"/>		
15.		<input type="radio"/>	<input type="radio"/>		

# **SMALL QUANTITY GENERATOR (SQG) INSPECTOR SELF-CERTIFICATION CHECKLIST**

## **INSTRUCTIONS FOR SECTIONS C-L**

- Mark **YES** if you are in compliance
- Mark **NO** if you are out of compliance. If you answer **NO**, write in the **DATE FIXED** indicating the date that you corrected or will correct the violation.
- If the question is not applicable write "N/A"

<b>C.</b>	<b>Used Oil Management</b> <i>Checklist Guidance Document page 8</i>	<b>YES</b>	<b>NO</b>	<b>DATE FIXED or N/A</b>
1.	Are containers of used oil marked with the words "Used oil"? 6 CCR 1007-3, section 279.22	<input type="radio"/>	<input checked="" type="radio"/>	2/20/08
2.	Are all used oil spills and releases cleaned up immediately and properly managed? 6 CCR 1007-3, section 279.22	<input checked="" type="radio"/>	<input type="radio"/>	
3.	Has your facility taken measures to prevent the release of used oil to the environment? 6 CCR 1007-3, section 279.22	<input checked="" type="radio"/>	<input type="radio"/>	
4.	Are all containers used to store used oil outside kept closed except when adding or removing waste? 6 CCR 1007-3, section 279.22	<input type="radio"/>	<input type="radio"/>	N/A

<b>D.</b>	<b>Hazardous Waste Container Management – 180-day (or 270-day) Area</b> <i>Checklist Guidance Document pages 9→ 10</i>	<b>YES</b>	<b>NO</b>	<b>DATE FIXED or N/A</b>
1.	Are all containers used to store hazardous waste labeled with the words "Hazardous Waste"? 6 CCR 1007-3, sections 262.34(a)(3) and 262.34(d)(4)	<input checked="" type="radio"/>	<input type="radio"/>	
2.	Are containers that are used to store hazardous waste labeled with the date when the first drop of hazardous waste is added to the container <u>or</u> the date when the satellite accumulation area container becomes full? 6 CCR 1007-3, sections 262.34(a)(2) and 262.34(d)(4)	<input checked="" type="radio"/>	<input type="radio"/>	
3.	Are all containers used to store hazardous waste in good condition (not rusted, dented, bulging or leaking)? 6 CCR 1007-3, sections 262.34(d)(2) and 265.171	<input checked="" type="radio"/>	<input type="radio"/>	
4.	Are all containers used to store hazardous waste kept closed except when adding or removing waste? 6 CCR 1007-3, sections 262.34(d)(2) and 265.173(a)	<input checked="" type="radio"/>	<input type="radio"/>	
5.	Are all containers used to store hazardous waste inspected at least weekly looking for containers in poor condition and leaks? 6 CCR 1007-3, sections 262.34(d)(2) and 265.174	<input checked="" type="radio"/>	<input type="radio"/>	
6.	Have you determined what wastes can be stored together? (Are incompatible wastes segregated from each other? Are acids and bases stored separately?) 6 CCR 1007-3, sections 262.34(d)(2) and 265.177(c)	<input checked="" type="radio"/>	<input type="radio"/>	
7.	Are containers shipped to an appropriate treatment, storage, and disposal facility (TSD) within 180 days (or 270 days if the TSD is more than 200 miles away)? 6 CCR 1007-3, sections 262.34(d) and 262.34(e)	<input checked="" type="radio"/>	<input type="radio"/>	



**SMALL QUANTITY GENERATOR (SQG)  
INSPECTOR SELF-CERTIFICATION CHECKLIST**

<b>E.</b>	<b>Hazardous Waste Container Management – Satellite Accumulation Areas</b> <i>Checklist Guidance Document pages 11 → 12</i>	<b>YES</b>	<b>NO</b>	<b>DATE FIXED or N/A</b>
1.	Do you have satellite accumulation area containers at your facility? (If you answer “No,” it is not a violation.)	<input type="radio"/>	<input checked="" type="radio"/>	N/A
2.	Are all containers in satellite accumulation areas properly labeled with the words “Hazardous Waste” or other words that describe the contents of the containers? 6 CCR 1007-3, section 262.34(g)(1)	<input type="radio"/>	<input type="radio"/>	N/A
3.	Are all containers in a satellite accumulation area managed to meet the requirements of D.3 through D.6, above? 6 CCR 1007-3, section 262.34(g)(1)	<input type="radio"/>	<input type="radio"/>	N/A
4.	Are all containers in a satellite accumulation area moved to the 180-day area when they are full or when 55 gallons has been accumulated? 6 CCR 1007-3, section 262.34(g)(2)	<input type="radio"/>	<input type="radio"/>	N/A

<b>F.</b>	<b>Off-Site Shipment of Hazardous Waste</b> <i>Checklist Guidance Document pages 13 → 15</i>	<b>YES</b>	<b>NO</b>	<b>DATE FIXED or N/A</b>
1.	Does your facility have a reclamation agreement with a hazardous waste recycling facility such as Safety-Kleen or Clean Parts? (If you answer “No,” it is not a violation.) 6 CCR 1007-3, section 262.20(e)	<input type="radio"/>	<input checked="" type="radio"/>	N/A
2.	Are off-site shipments of hazardous wastes that are not covered by a reclamation agreement accompanied with a hazardous waste manifest? 6 CCR 1007-3, section 262.20	<input checked="" type="radio"/>	<input type="radio"/>	
3.	Are all hazardous waste manifests routinely completed accurately and completely? 6 CCR 1007-3, section 262.20	<input type="radio"/>	<input checked="" type="radio"/>	2/20/08
4.	Are all hazardous waste manifests retained for 3 years? 6 CCR 1007-3, sections 262.40(a) and 262.44(a)	<input checked="" type="radio"/>	<input type="radio"/>	
5.	Has land disposal restriction (LDR) documentation been completed for each waste stream and for each treatment and storage facility? 6 CCR 1007-3, Part 268 Subpart D	<input checked="" type="radio"/>	<input type="radio"/>	
6.	Are all land disposal restriction documents retained on-site for three years? 6 CCR 1007-3, Part 268.7(a)(8)	<input checked="" type="radio"/>	<input type="radio"/>	
7.	Are signed hazardous waste manifests from the treatment, storage, disposal facilities received within 60 days of waste shipment? 6 CCR 1007-3, sections 262.42(c) and 262.44(b)	<input checked="" type="radio"/>	<input type="radio"/>	
8.	If manifests were not received within 60 days, was the Hazardous Materials and Waste Management Division notified? 6 CCR 1007-3, sections 262.42(c) and 262.44(b)	<input checked="" type="radio"/>	<input type="radio"/>	

**SMALL QUANTITY GENERATOR (SQG)  
INSPECTOR SELF-CERTIFICATION CHECKLIST**

<b>G.</b>	<b>Hazardous Waste Training and Emergency Response</b> <i>Checklist Guidance Document pages 16 → 18</i>	<b>YES</b>	<b>NO</b>	<b>DATE FIXED or N/A</b>
1.	Are all personnel involved with hazardous waste management trained so that they are thoroughly familiar with proper hazardous waste handling and emergency response procedures? 6 CCR 1007-3, section 262.34(d)(5)(iii)	<input checked="" type="radio"/>	<input type="radio"/>	
2.	Has an emergency coordinator been established for the facility and is he/she familiar with his/her responsibilities in that position? 6 CCR 1007-3, section 262.34(d)(5)(i)	<input checked="" type="radio"/>	<input type="radio"/>	
3.	Has emergency response information been posted by the telephone? 6 CCR 1007-3, section 262.34(d)(5)(ii)	<input checked="" type="radio"/>	<input type="radio"/>	
4.	Have you determined what emergency equipment is appropriate for your facility? 6 CCR 1007-3, sections 262.34(d)(4) and 265.32	<input checked="" type="radio"/>	<input type="radio"/>	
5.	Is adequate aisle space provided around the containers of hazardous waste to allow for unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment? 6 CCR 1007-3, sections 262.34(d)(4) and 265.35	<input checked="" type="radio"/>	<input type="radio"/>	
6.	Have emergency response arrangements been made with the local response organizations (fire department and hospitals) that are likely to respond in an emergency situation? 6 CCR 1007-3, sections 262.34(d)(4) and 265.37	<input checked="" type="radio"/>	<input type="radio"/>	
7.	Is the facility operated in a manner that minimizes the potential for releases of hazardous waste? 6 CCR 1007-3, sections 262.34(d)(4) and 265.31(a)	<input checked="" type="radio"/>	<input type="radio"/>	
8.	What fire protection district is the facility in?  Write the Name in here: <u>Aurora Fire Department</u>			

<b>H.</b>	<b>On-Site Hazardous Waste Treatment Land Disposal Restriction Treatment</b> <i>Checklist Guidance Document pages 19 → 20</i>	<b>YES</b>	<b>NO</b>	<b>DATE FIXED or N/A</b>
1.	Do you know what land disposal restriction treatment standards are? (If you answer "No," it is not a violation.) 6 CCR 1007-3, section 268.7(a)(5)	<input checked="" type="radio"/>	<input type="radio"/>	N/A
2.	Is your facility treating hazardous waste on site to make it more suitable for recycling or reclamation or to reduce its volume or toxicity? (If you answer "No," it is not a violation.) 6 CCR 1007-3, section 260.10	<input type="radio"/>	<input checked="" type="radio"/>	N/A
3.	Is your facility treating hazardous waste in tanks, or containers, or in a containment building? (If you answer "No," it is not a violation.) 6 CCR 1007-3, section 268.7(a)(5)	<input type="radio"/>	<input checked="" type="radio"/>	N/A
4.	Is your facility treating any hazardous waste to meet a land disposal restriction treatment standard? (If you answer "No," it is not a violation.) 6 CCR 1007-3, section 268.7(a)(5)	<input type="radio"/>	<input checked="" type="radio"/>	N/A
5.	If you are treating hazardous waste to meet land disposal restriction standards, do you have a written waste analysis plan on site? 6 CCR 1007-3, section 268.7(a)(5)	<input type="radio"/>	<input checked="" type="radio"/>	

**SMALL QUANTITY GENERATOR (SQG)  
INSPECTOR SELF-CERTIFICATION CHECKLIST**

<b>I.</b>	<b>On-Site Hazardous Waste Treatment Permit Requirements and Exclusions</b> <i>Checklist Guidance Document pages 21</i>	<b>YES</b>	<b>NO</b>	<b>DATE FIXED or N/A</b>
1.	Is your facility treating hazardous waste under the Permit By Rule provisions of the Colorado Hazardous Waste Regulations? (If you answer "No," it is not a violation.) 6 CCR 1007-3, section 100.21(d)	<input type="radio"/>	<input checked="" type="radio"/>	N/A
2.	Is your facility treating a reactive hazardous waste? (If you answer "No," it is not a violation.) 6 CCR 1007-3, section 100.21(d)(6)	<input type="radio"/>	<input checked="" type="radio"/>	N/A
3.	Is your facility heating hazardous waste to treat it? (If you answer "No," it is not a violation.) 6 CCR 1007-3, section 100.21(d)(5)	<input type="radio"/>	<input checked="" type="radio"/>	N/A

<b>J.</b>	<b>On-Site Hazardous Waste Treatment Waste Water Treatment</b> <i>Checklist Guidance Document pages 22</i>	<b>YES</b>	<b>NO</b>	<b>DATE FIXED or N/A</b>
1.	Does your facility treat any hazardous waste in a Waste Water Treatment Unit? (If you answer "No," it is not a violation.) 6 CCR 1007-3, sections 260.10 and 100.10(a)	<input type="radio"/>	<input checked="" type="radio"/>	N/A
2.	If you are treating hazardous waste in a Waste Water Treatment Unit, have you obtained a discharge permit or a zero-discharge permit? 6 CCR 1007-3, sections 260.10 and 100.10(a)	<input type="radio"/>	<input type="radio"/>	N/A
3.	Does the Waste Water Treatment Unit meet the definition of a tank or tank system? 6 CCR 1007-3, sections 260.10 and 100.10(a)	<input type="radio"/>	<input type="radio"/>	N/A

<b>K.</b>	<b>Air Pollution Control</b> <i>Checklist Guidance Document page 23</i>	<b>YES</b>	<b>NO</b>	<b>DATE FIXED or N/A</b>
1.	Has your facility filed for an Air Pollution Emissions Notice (APEN) or been issued an air permit? (If you answer "No," it is not a violation.)	<input checked="" type="radio"/>	<input type="radio"/>	N/A

<b>L.</b>	<b>Pollution Prevention</b> <i>Checklist Guidance Document page 23</i>	<b>YES</b>	<b>NO</b>	<b>DATE FIXED or N/A</b>
1.	In the last 12 months, has your facility taken one or more actions to reduce toxics, conserve water, or energy? (If you answer "No," it is not a violation.)  Write in the projects you have implemented _____ _____ _____ _____ _____	<input type="radio"/>	<input checked="" type="radio"/>	N/A



**SMALL QUANTITY GENERATOR (SQG)  
INSPECTOR SELF-CERTIFICATION CHECKLIST**

**Inspector Comments:**

February 20, 2008  
Facility Name: Timminco Corp  
EPA ID NO: COD030446637  
Inspectors: Beth Ann Williams  
HW Transporter: Clean Harbors  
HW TSD: Clean Harbors, Kimball, Nebraska

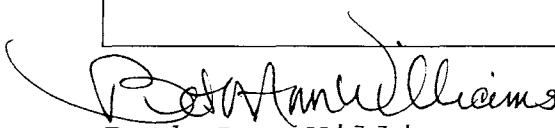
Mr. Hartman indicated that Timminco Corp generates somewhere between about 160 and 230 pounds of hazardous waste each month, depending on business volume. On the day of the inspection, this facility was operating as a Conditionally Exempt Small Quantity Generator (CESQG). However, due to their tendency to be an episodic Small Quantity Generator (SQG) during months of greater business volume, and because they comply with the greater regulatory requirements of a Small Quantity Generator, they desire to retain the current notified status as a Small Quantity Generator.

Although no violations were noted, there were two issues that were observed at the time of the inspection. These issues were corrected by facility personnel at the time of the site visit. These issues were as follows:

6 CCR 1007-3 Section 279.22  
Containers of used oil were labeled with the words "Waste Oil." Mr. Hartman instructed personnel to change the labels to read "Used Oil" at the time of the site visit.

6 CCR 1007-3, Section 262.20  
Line one of the hazardous waste manifests read "CESQG" rather than the facility's EPA ID number. Mr. Hartman understands that although Clean Harbors had been completing the manifests for Timminco Corp, it is the facility that is ultimately responsible that the manifests are completed accurately. Mr. Hartman took immediate action, at the time of the inspection, to ensure all future manifests will have the facility's EPA ID number listed on line one.

No other SQG issues were noted on the day of the site visit. See the inspection checklist for coverage areas.

  
Beth Ann Williams

Inspector

02/20/2008

Date Inspected (mm/dd/yyyy)

CLEAR FORM

**Colorado Department of Public Health and Environment**  
**Hazardous Materials and Waste Management Division**  
4300 Cherry Creek Drive South, Mail Code: HMWMD-CP-B2, Denver, Co 80246-1530  
(303) 692-3300

## Notice of Inspection

Facility Name <u>Timminco Corp</u>			EPA I.D.# <u>COD030446637</u>	Date <u>2/20/08</u>
Street <u>3595 Moline St</u>			Inspection Arranged Prior to Inspection <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	Hour In: <u>12:00 P.M</u>
City <u>Aurora</u>	County <u>Adams</u>	Zip <u>80010</u>	Enter By: <input checked="" type="checkbox"/> Consent <input type="checkbox"/> Warrant	Hour Out: <u>1:30 P.M</u>
Facility Representatives <u>Dan Hartman</u>		Titles <u>EH4S</u>	Telephone # <u>303.343.8667</u> <u>X215</u>	Agency: <input checked="" type="checkbox"/> State <input type="checkbox"/> Oversight <input type="checkbox"/> Joint
CURRENT NOTIFICATION(S) <input type="checkbox"/> LQG, <input checked="" type="checkbox"/> SQG, <input type="checkbox"/> Exempt, <input type="checkbox"/> LDF, <input type="checkbox"/> TSF, <input type="checkbox"/> Transporter, <input type="checkbox"/> Non-Notifier, <input type="checkbox"/> Transfer facility or <input type="checkbox"/> Other <u>                    </u> <b>To Change Status; Facility must send Letter or Revised Notification.</b>				

Comments:

A compliance inspection (ERP-SQG) was conducted on 2/20/08. Please ensure all containers of used oil are marked or labeled with the words "Used Oil" (not waste oil). Ensure EPA ID no is on line one of all manifests. No violations were noted.

**Assistance Delivered During Inspection (for internal use - check ALL that apply):**

**Compliance Assistance:**

☒ Generator Handbook ☐ Field Assistance  
☒ Other guidance documents ☐ Referral to another program  
☐ Change in generator status ☐ downward ☐ upward

**Pollution Prevention:**

☐ Guidance/Referral  
☐ Field Assistance

**Current Waste Minimization:**

☐ Product Substitution  
☐ Distillation of solvents on site  
☐ Elementary Neutralization  
☐ Other

Samples, Documents, Plans, and / or Photos Collected	3.
1.	
2.	4.

State personnel will review the facts established by this inspection. A final determination of your facility's compliance with State Regulations will be made as a result of this review. The review may reveal additional violations.

Receipt of this Notice of Inspection Form is Acknowledged	Lead Inspector: <u>Beth Ann Williams</u>
	Assisting Inspector(s) and Multimedia Participant(s)
Signature of Facility Representative <u>X [Signature]</u>	

**PHASE I ENVIRONMENTAL  
SITE ASSESSMENT**

Timminco Property  
10380 Smith Road  
Aurora, Colorado

Freedom Project No. 0606-076

Prepared for:

Bruce B. Beaton Real Estate Investments, Inc.  
c/o Liberty Greenfield Corporate Real Estate Advisors  
717 17<sup>th</sup> Street, Suite 2700  
Denver, CO 80202

Prepared by:

***Freedom Environmental Consultants, Inc.***  
12808 West 56<sup>th</sup> Place  
Arvada, Colorado 80002-1330

December 18, 2006



**FREEDOM ENVIRONMENTAL  
CONSULTANTS, INC.**

12808 West 56<sup>th</sup> Place  
Arvada, CO 80002-1330  
Telephone: (303) 940-1410  
Facsimile: (303) 940-1420

December 18, 2006

Mr. Bruce Beaton  
Bruce B. Beaton Real Estate Investments, Inc.  
c/o Liberty Greenfield Corporate Real Estate Advisors  
717 17<sup>th</sup> Street, Suite 2700  
Denver, CO 80202

Subject: Transmittal of Phase I Environmental Site Assessment Report  
Timminco Property  
10380 Smith Road, Aurora, CO  
Freedom Job No.: 0606-076

Dear Mr. Beaton:

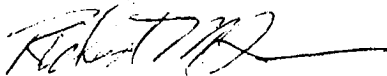
This document is the final report for an Environmental Site Assessment conducted at the referenced site. The study was performed in accordance with Freedom's proposal to Liberty-Greenfield Corporate Real Estate Advisors dated October 24, 2006 and in general accordance with the ASTM Standard E1527-05.

Several common acronyms are used throughout this report. For your convenience, Appendix C lists many common acronyms that may be found in environmental reports.

The information accumulated for this assessment will be retained with your project file. We appreciate the opportunity to perform these Services for you. Please contact me if you have any questions regarding this information.

Sincerely,

**FREEDOM ENVIRONMENTAL CONSULTANTS, INC.**



Richard M. Luce  
President and Principal Geologist  
Environmental Professional

attachment

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**EXECUTIVE SUMMARY  
PHASE I ENVIRONMENTAL SITE ASSESSMENT**

**Timminco Property  
10380 Smith Road  
Aurora, Colorado**

As authorized by Mr. Joseph Havas of Ruby Stein Wagner & Associates on October 27, 2006, Freedom Environmental Consultants performed a Phase I environmental site assessment (ESA) of the above-referenced site (site) in accordance with Freedom's proposal dated October 24, 2006 and in general accordance with the ASTM Standard E1527-05. The following is a summary of findings, conclusions and recommendations, and specific details were not included or fully developed in this section. The report must be read in its entirety for a comprehensive understanding of the items contained in this summary.

Site Description	
Approximate size	9 acres m/l
Property type Occupant(s)	Industrial Timminco Corporation
Nearby roadways	Smith Road adjoins the site to the north and Moline Street adjoins the site to the east.
Access to site	Access to the site is from Moline Street.
Improvements	The site is improved by a large commercial/industrial building (north) of approximately 78,000 square feet and a warehouse building (south) of approximately 36,000 square feet. The balance of the site includes outdoor storage and driveways to the north, east and west of the buildings and landscaped areas to the north.
Activity & Use Limitations (AULs)	None
Surrounding area	The site is located in an area of commercial and industrial businesses.

**Historical Information Summary:** The site acreage was undeveloped land in the 1940s and 1950s, but appeared to have been filled in the 1960s in preparation for development. The current north building was constructed in 1969 and historical information indicated that the south building was constructed in 1972. From the time of construction until about 1999, the site was occupied by Dow Chemical's Magnesium Extrusion fabrication plant. Since that time, Timminco has owned the business and continued the operation. Historical operations included some solvent use, and a subsurface investigation was conducted in 1999 at the time of the business sale. The investigation results indicated that low concentrations of volatile organic compounds were detected in the site soils and groundwater, but no detected concentrations exceeded any State or Federal action levels. Several metals were detected in soils and groundwater, but all were below action levels or were also detected in the upgradient wells suggesting an off-site source. The results of the subsurface investigation did not suggest RECs for the site.

The adjoining properties to the east and west were vacant range land in the 1940s and 1950s. Landfilling operations occurred on both properties prior to their current use. By

the early 1970s, commercial development of the adjoining property to the east had commenced. It continued into the early 1980s and has had a number of tenants since that time. Landfilling continued into the late 1960s or early 1970s on the adjoining property to the west. It was covered and has been undeveloped since that time. The nearest commercial development north of the site began about the same time as the site development and continued to expand through the 1990s. It has been occupied for many years by Frito Lay. The adjoining property to the south was first developed for commercial use by the early 1970s but the historic tenants were not identified in the city directory research. The adjoining historic property uses are not suspected to represent RECs for the site at this time.

**Site Reconnaissance Summary:** The site is improved by two commercial/industrial buildings. Currently, Timminco operates the facility that has been on site since 1969. Timminco has ceased use of much of the solvent that was identified in the 1999 subsurface investigation report. Currently, a limited number of solvents are used at the site for equipment maintenance. One solvent stand is operated and is maintained by Safety Kleen. Hydraulic are used to drive presses. Hydraulic pumps, flow lines, and presses are operated within areas of secondary containment or within closed trench and pit areas to contain any leaks. Acid and caustic baths are present in the south building and are used to clean dyes used in the fabrication operations. Waste acids and caustics as well as used oils are managed by Clean Harbors. Drummed new oil and used oil is stored inside the south building inside a secondary containment. The outdoor storage areas are used to store raw magnesium and aluminum products and miscellaneous items. No hazardous substances or wastes or petroleum products or wastes are stored outside. The current use is not a REC for the site.

**Regulatory Database Summary:** The site was identified as a registered storage tank facility, a Small Quantity Generator (SQG) of hazardous waste and for a spill in 1985. The tank contains propane and is not a REC for the site. The facility was cited in 2002 for a minor infraction related to their hazardous waste management, but they have not been referred to the corrective actions program. Their status as an SQG is not a REC for the site. The spill report indicated that the spilled chemical was PCBs and estimated the spilled volume at 10 to 20 gallons. The report indicated that the impacted medium was soil. Timminco personnel stated that they had no record of the spill in their files (it occurred before Timminco bought the site), and because of the age of the spill, the State and Federal agencies have no additional records. The available records suggested that it was cleaned up although there is no documentation available. Because of the magnitude and the age of the spill, it is not considered a REC for the site. The site was not identified on any other state or federal regulatory databases searched.

Regulated facilities adjoined the site to the east and west. Both are former landfill areas. The adjoining area to the east in the area cross- to upgradient was identified as demolition fill although some historic testing identified at least limited methane generation. In the event of groundwater contamination at that location, the groundwater beneath the subject site may be impacted. The facility to the west was identified for domestic fill, as well as other types of disposal. An investigation in that area suggested groundwater impacts. However, the facility is on the downgradient side of the site and should not pose a REC for the site. Several other regulated facilities were identified in the area generally upgradient but not adjoining the site. However, they did not appear to

represent RECs for the site. The remaining facilities were located in areas cross- to downgradient and are not considered RECs for the site.

***Findings and Conclusions:*** This assessment has revealed no evidence of recognized environmental conditions (RECs) for the site.

With regard to the above-listed Findings and Conclusions, Freedom makes no recommendations for additional assessment at this time.



## 1.0 INTRODUCTION

As authorized by Mr. Joseph Havas of Ruby Stein Wagner & Associates for the benefit of Bruce B. Beaton Real Estate Investments, Inc. (Client) on October 27, 2006, Freedom Environmental Consultants (Freedom) performed a Phase I environmental site assessment (ESA) of the Timminco property at 10380 Smith Road, Aurora, Colorado (site). The location of the site is shown on Figure 1.

### 1.1 Purpose

The purpose of a Phase I Environmental Site Assessment is to aid the Client in the fulfillment of the requirements of the EPA's All Appropriate Inquiry rule issued November 1, 2005. To the extent feasible pursuant to the processes prescribed in ASTM E1527-05, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*, this ESA identifies "recognized environmental conditions" in connection with the site. As defined in the ASTM, recognized environmental conditions are those that indicate "the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of release of any hazardous substances or petroleum products into the structures on the property or into the ground, groundwater, or surface water of the property...even under conditions in compliance with laws." RECS do not include *de minimis* conditions that "generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies."

### 1.2 Scope of Work

These services were performed in accordance with Freedom's proposal dated October 24, 2006 and in general accordance with the ASTM Standard E1527-05. A Phase I ESA has four basic components, including: interviews, review of historical and regulatory database information, general description of the site's physical setting (i.e., geology, topography) and a non-invasive site reconnaissance.

The scope of work for this ESA involves the following tasks:

- Site history review using reasonably ascertainable and readily available records as per ASTM to reveal the site's obvious usage from 1940 or its first developed use, whichever is earlier. This review considered the following information sources for the site and adjoining properties: city directories, aerial photographs, prior ESA reports (if any, provided by Client), fire insurance maps, and land title records (site only, if any, provided by Client). Reasonable attempts were made to interview those with historical details about the site. Historical records review for non-adjoining properties was out-of-scope.
- Review of federal and state environmental database listings compiled by an environmental database search company for the site and facilities within the search radii recommended by ASTM. Identification or confirmation of database listings shown as "unmappable" was out-of-scope. In addition, reasonable attempts were made to contact federal, state and/or local agencies who might be expected to possess information regarding the environmental condition of the site and not readily available through other sources.

- Physical setting information review for the site area derived from the applicable USGS topographic quad and geologic maps, USDA soil surveys, and other readily available sources as may be applicable.
- A non-invasive site reconnaissance to observe accessible and representative portions of the site for RECs. As suggested by ASTM, visual evidence of RECs may include stained soils, stressed vegetation, transformers, evidence of above ground or underground storage tanks, trash and debris, use or storage of hazardous substances or petroleum products. An attempt was made to interview the site contact identified by the Client to learn more about the uses and environmental information for the site. Observations of adjoining properties (from the site's boundaries and public right-of-ways) were made to identify apparent RECs.

This ESA does not include the following: ASTM E-1527-05 Non-Scope Considerations (such as asbestos containing materials, radon, wetlands, lead, regulatory compliance, ecological issues, indoor air quality/fungi, high voltage power lines and other potential issues), detailed review of governmental agency records, review of information or records not received within two (2) days of the final report date, business environmental risk evaluations, or other Services not discussed in this report.

### **1.3 Standard of Care, Use and Limitations**

Freedom services were performed in a manner consistent with industry practices; no warranties, express or implied, are intended or made. Due to the non-invasive, limited and opinion-based nature of a Phase I ESA, Freedom cannot eliminate uncertainty as to environmental conditions at the site nor can we represent that the site contains no hazardous substances, petroleum products or other latent conditions beyond those identified or observed through the Services performed for this ESA. The findings and conclusions in this final report are based upon the site's current use and information sources listed above that are obtained prior to issuance of the final report. Freedom does not warrant the accuracy of information obtained from interviewees or other third parties (e.g., other environmental firms, database or title companies).

Unless otherwise agreed, this ESA was prepared for the exclusive use and reliance of the Client named on the cover of this report and their lender. Third party reliance may be had (if there is no potential conflict of interest between the parties) using a reliance form that is subject to the terms of the proposal for these Services and Freedom's standard Terms and Conditions. The limit of liability specified in those Terms and Conditions constitutes Freedom's aggregate amount of liability to the Client and all relying parties.

The Services herein are in no way to be construed to be or relied upon as a legal interpretation, opinion or advice.

The following ASTM exceptions or deviations apply to these Services (or are described in the scope of work or applicable sections of this report): no exceptions.

## 1.4 User-Provided Information

As partial fulfillment of the ASTM and AAI standards of practice, Freedom provided a User Questionnaire to the Liberty-Greenfield for completion.

The owner representative returned a completed copy of the questionnaire. That questionnaire indicated that land title had not been checked, but they were not aware of any liens. A copy of the information provided is attached in Appendix D.

Other information provided by the Client or their customer through the questionnaire, if any, is discussed in appropriate sections of the report.

## 2.0 GENERAL SITE CHARACTERISTICS

### 2.1 Site Description

The pertinent site features are shown on Figure 2 and described in the following table. Photographs of the site are included in Appendix A. Note that photographic documentation was limited by Timminco to non-production areas.

TABLE 2-1 Site Description	
Approximate size	9 acres m/l
Property type Occupant(s)	Industrial Timminco Corporation
Nearby roadways	Smith Road adjoins the site to the north and Moline Street adjoins the site to the east.
Access to site	Access to the site is from Moline Street.
Improvements	The site is improved by a large commercial/industrial building (north) of approximately 78,000 square feet and a warehouse building (south) of approximately 36,000 square feet. The balance of the site includes outdoor storage and driveways to the north, east and west of the buildings and landscaped areas to the north.
Activity & Use Limitations (AULs)	None
Section, Township, Range	A Portion of the Northwest Quarter of the Northeast Quarter of Section 26, Township 3 South, Range 67 West, 6 <sup>th</sup> Principal Meridian

### 2.2 Adjoining and Surrounding Properties

The surrounding area and adjoining properties are described in the following table:

TABLE 2-2 Adjoining and Surrounding Properties	
General Description Surrounding Properties	The site is located in an area of commercial and industrial businesses.
Adjoining – North	Large industrial properties are north of the site beyond Smith Road and the railroad tracks.



TABLE 2-2 Adjoining and Surrounding Properties	
Adjoining – East	Moline Street adjoins the site to the east, beyond which are two commercial properties at 3576 and 3596 Moline Street.
Adjoining – South	A commercial building occupied by Russell Stover Candies adjoins the site to the south at 3333 Moline Street.
Adjoining - West	A large filled property adjoins the site to the west, beyond which is the Denver County Jail.

### 3.0 PHYSICAL SETTING

The following information was obtained to provide details as to the site's physical setting. Note that this report may use the terms "up-gradient, cross or side-gradient and down-gradient." These terms refer to the topographic gradient as related to the site which often mirrors actual gradient. Note, however, that groundwater flow direction and the depth to any shallow groundwater likely vary based upon seasonal changes (i.e., precipitation amounts) and the depth to the soil/bedrock interface. Actual groundwater gradient, depth and flow directions cannot be confirmed without information obtained from groundwater monitoring wells installed on site and/or nearby.

#### 3.1 Topography

The site is located on the Montbello, Colorado 7½-minute USGS topographic quadrangle, prepared in 1965 and revised in 1994. The overall slope of the vicinity is gently down to the southwest toward Sand Creek. The site elevation is approximately 5,300 feet above mean sea level (msl). It is located within the Great Plains physiographic province.

#### 3.2 Soils and Geology

The soil survey for the site vicinity indicated that it is located within an area of the Ascalon-Vona-Truckton association, described as "Nearly level to strongly sloping, well-drained and somewhat excessively drained, loamy and sandy soils formed in windlaid deposits; on uplands" (USGS – Sampson, 1974). The specific soil unit for the site was the Truckton sandy loam. Underlying the site soils are sediments of the Quaternary eolian deposits beneath which are sediments of the Tertiary-Cretaceous Denver Formation and Lower Part of the Dawson Arkose sediments (Tweto, 1979). Eolian sediments typically consist of fine-grained sandstones, siltstones and shales or claystones deposited in a wind-laid environment. The Denver and Dawson generally consist of shales and claystones with interbedded sandstones and siltstones.

#### 3.3 Groundwater

The site lies within the Denver Basin principal aquifer system (USGS, 1997). The upper units of the system include the Dawson, Denver, and Arapahoe members, which are typically unconfined or semi-confined water-bearing zones. The stratigraphically lowest member of the aquifer system is the Cretaceous Fox Hills Formation, which is a confined water-bearing unit in much of the Denver metropolitan area.

Shallow groundwater flow typically follows, and can be hypothesized from, the general slope of surface topography, but cannot be confirmed without the benefit of subsurface water level data. Although the topography slopes down to the southwest, a subsurface investigation at the site (described further in Section 4.6) shows the direction of groundwater flow to be toward the northwest.

#### **4.0 HISTORICAL RECORDS REVIEW**

This review used reasonably ascertainable and readily available records as per ASTM to reveal the site's obvious usage from 1940 or its first developed use, whichever is earlier. Reasonable attempts were made to interview those with historical details about the site. Historical records review for non-adjointing properties was out-of-scope. The results of this research are discussed below.

##### **4.1 Site Ownership**

According to real estate ownership records available on the internet through the Adams County Assessor's Office, the site is owned by Neuropa Limited and others. Freedom personnel spoke with Mr. Scott Churchley of Liberty Greenfield regarding the site ownership (Pc1a, 12/18/06). Mr. Churchley stated that there are several owners of the site property, the majority interest of which is Neuropa, Ltd. He reported that the ownership interests and periods of ownership have varied, but they have owned the site for about the past 30 years. Chain-of-title records were not provided for this assessment. The available ownership information does not suggest a historic use indicative of RECs.

No environmental liens were identified during the title search for the site.

##### **4.2 Historical Interviews**

Freedom's contact for Timminco, the current site tenant, was Mr. Shaun Keeling of Timminco. Freedom spoke with Mr. Keeling regarding the site history (Pc2a, 11/3/06). Mr. Keeling stated that Dow Chemical occupied the site from the time it was constructed until the late 1990s. At that time, Timminco acquired the business and continued to operate at the site since that time. To his knowledge, there were no USTs at the site. Additional operational information is included in Section 6 of this report.

A copy of the Record of Communication is included in Appendix D.

A summary of the site history included in a 1999 Phase II Field Investigation indicated that the Dow Chemical Magnesium Extrusion fabrication plant has been on site since its construction in 1969 (north building). The report indicated that the machine shop was constructed in 1972 (south building). It was leased to Otis Elevator from the mid-1970s until 1986 when Dow took it back and converted it to administrative offices and the fabrication building.

The manufacturing activities utilize extrusion technology to form magnesium billets and ingots. Machining of extruded materials is conducted without the use of cutting fluids.

### 4.3 Aerial Photographs

Commercially-available aerial photographs were reviewed at Colorado Aerial Photograph Service in Denver, Colorado, to reveal historical development of the site and adjoining properties. Review of these photos may be limited by a photo's quality and scale. A summary of this review is provided below.

<b>TABLE 4-1 Aerial Photograph Review</b>	
<b>Photo Date Photo No.</b>	<b>Summary of Apparent Features</b>
<b>October 21, 1948 DV-5-038, 039</b>	<b>SITE:</b> The site is open, vacant range land. <b>NORTH:</b> Smith Road and a railroad track adjoin the site to the north. Vacant range land is farther north. <b>EAST:</b> Vacant range land is east of the site. <b>SOUTH:</b> Vacant range land is south of the site with Sand Creek farther south. <b>WEST:</b> A cut bank of an intermittent drainage is west of the site with vacant land farther west.
<b>April 16, 1954 56-91, 92</b>	<b>SITE:</b> NC <b>NORTH:</b> NC <b>EAST:</b> NC although a small residence is to the far east. <b>SOUTH:</b> NC although a small reservoir is to the far south. <b>WEST:</b> NC
<b>March 30, 1964 117-168, 169</b>	<b>SITE:</b> NC although the site may have been filled. The area is being developed. <b>NORTH:</b> NC although just farther north, the land is scarred probably from grading. <b>EAST:</b> A small north-south road is just east of the site. A residential area is to the far southeast. <b>SOUTH:</b> A wastewater treatment plant is just south of the site beyond a small intervening vacant parcel. <b>WEST:</b> Trash or debris is visible west of the site. The land surface is higher than it was.
<b>April 28, 1974 140-403, 404</b>	<b>SITE:</b> The site is improved with the current main building on the northern portion of the site and a second building on the southern portion. Paved parking is north and east of the site with trailer parking and outdoor storage along the south side of the main building. <b>NORTH:</b> Smith Road adjoins the site to the north and a small commercial building is farther north. Vacant land is northeast and northwest from the site. <b>EAST:</b> Moline Street adjoins the site to the east with building pads under construction east of the southeast portion of the site and farther to the southeast. <b>SOUTH:</b> Two commercial buildings are south of the site beyond a narrow intervening parcel. The wastewater treatment plant is farther south. <b>WEST:</b> Additional filling on the adjoining property appears to have taken place.
<b>November 18, 1984 170, 171</b>	<b>SITE:</b> NC although additional development of the area is under way. <b>NORTH:</b> The building to the north has been expanded to the east. Many other commercial/industrial buildings are to the north. <b>EAST:</b> The buildings east of the southeast portion of the site and to the southeast have been completed. A small commercial building is east of the northeast portion of the site. <b>SOUTH:</b> A third building has been constructed to the south. <b>WEST:</b> NC



TABLE 4-1 Aerial Photograph Review	
Photo Date Photo No.	Summary of Apparent Features
July 7, 1995 93, 94	<p><b>SITE:</b> A small lower elevation structure has been constructed to the south of the southwest corner of the main building. The south building has its current configuration with additions to the west end.</p> <p><b>NORTH:</b> The building has been expanded to the north.</p> <p><b>EAST:</b> NC</p> <p><b>SOUTH:</b> NC</p> <p><b>WEST:</b> NC although development is farther west.</p>
June 7, 2005 58, 59	<p><b>SITE:</b> NC</p> <p><b>NORTH:</b> NC</p> <p><b>EAST:</b> NC</p> <p><b>SOUTH:</b> NC</p> <p><b>WEST:</b> NC</p>

NC = No change from the previous photograph

Of the apparent features summarized above, no site features were observed suggesting a REC for the site. None of the off-site features that were observed suggest a REC for the site. Landfilling was evident to the west in the area downgradient from the site. Apparent filling of the site acreage was reasonably addressed through a subsurface investigation described in Section 4.6, below.

#### 4.4 Fire Insurance Maps

The Sanborn Company prepared maps for use by fire insurance companies since the late 1800s. These maps, which have been updated and expanded geographically on a periodic basis, provide information on the historical use of properties, including the name and business of the building occupants, construction materials, and features, such as aboveground or underground storage tanks. Sanborn Maps are typically published for central business districts and were not available for this site because of its historically rural location.

#### 4.5 City Directories

City directories were reviewed for this project by Satisfi Environmental Information based on information available at the Denver Public Library, Western History Section. The directories searched included the following years: Denver Householder's 1956, Polk's 1960, XL's 1955-56 and 1959, Bresser's 1965-66 and 1970-71, Cole's 1975, 1985, 1995, 1999 and 2004 and US West 1989/90. The site addresses included 11380 Smith Road and 3555 and 3595 Moline Street. Copies of these listings are not provided due to copyright restrictions, but are summarized in the following table.

TABLE 4-2 City Directory Review (possible RECs are in bold print)		
Year	Site Listing	General Description of Adjoining Property Listings
1955-56	NL	NL for any adjoining properties
1959/60	NL	aa
1965-66	NL	Denver County Jail is west of the site.

<b>TABLE 4-2 City Directory Review</b> (possible RECs are in bold print)		
<b>1970-71</b>	11380 Smith Road: Dow	aa
<b>1975</b>	aa	aa
<b>1980</b>	11380 Smith Road: Dow 3555 Moline: Dow	Businesses to the southeast.
<b>1985</b>	aa	Businesses are east and southeast of the site.
<b>1990</b>	3595 Moline: Dow	aa
<b>1995</b>	aa	aa
<b>1999</b>	NL	aa
<b>2004</b>	NL	aa

NL = No Listing

aa = Same as above

Dow Chemical operated the current facility on site since 1969. As described by site personnel (Section 4.2), the operation has remained substantially the same since original construction at the site. On that basis, the site listing is not a REC. Listings for adjoining properties to the east did not suggest the likelihood of RECs for the site from the adjoining properties.

#### **4.6 Additional Sources**

Freedom reviewed a Phase II Field Investigation prepared by URS in 1999. The following is a summary of Freedom's review of that report.

The purpose of the investigation was to evaluate potential site impacts from nearby landfills and historic site operations by Dow Chemical prior to the facility acquisition by Timminco. The scope of work included the drilling of several borings at the site and collection of soil and groundwater samples for laboratory analyses. The groundwater study indicated that the direction of groundwater flow was to the northwest.

Soil samples were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), total recoverable petroleum hydrocarbons (TRPH), and 23 metals (Target Analyte Metals, TAL). Eight VOCs were detected in soil samples collected from depths of three to six feet. None of the detected compounds were found to exceed any regulatory limits or clean up guidelines. No SVOCs were detected. TRPH was detected in press and drum storage areas, but TRPH is not a regulated substance. URS concluded that the detected concentrations were generally below risk-based screening levels or were generally within ranges of background concentrations.

Groundwater samples were analyzed for the same metals and organic compounds as the soil samples. VOCs were detected in six of 11 samples but none exceeded and federal or state groundwater standards. The most prevalent

detected compound appeared to be 1,1,1-trichloroethane (111TCA). It was detected in concentrations ranging from 2.1 to 43 micrograms per liter (µg/L, approximately equal to parts per billion) relative to the groundwater standard of 200 µg/L. The compound was not detected in the groundwater sample collected from the south (upgradient) site boundary. It appeared that the source of the compound was the south building. Based upon the number and distribution of groundwater samples at the site, it appeared that the extent of the compound was reasonably delineated. Because the detected concentrations did not exceed the regulatory limit and the extent appeared reasonably delineated, it is not considered a REC for the site.

No SVOCs or TRPH were detected in the groundwater samples. Antimony, manganese, and selenium were present at concentrations exceeding screening levels, but all were present in upgradient wells indicating that their presence is either related to off-site conditions or is naturally occurring. On the basis of the investigation results, no significant impacts were identified.

Selected sections of the report are included in Appendix D. The included portions of the report include sample location rationale, site history, results and conclusions. On February 9, 1999, the CDPHE issued a letter indicating that they reviewed the Phase II report and concluded that no further action was necessary by Dow Chemical. A copy of that letter is included in Appendix D.

Historic topographic maps of the site and vicinity were researched to identify historic development of the site and vicinity, if any. Maps for the period from 1938 to 1994 were reviewed and the results are summarized below.

TABLE 4-3 Historical Topographic Map Review	
Map Name Date Scale	Summary of Apparent Features
<b>Long Branch</b> <b>1948 (surveyed 1938)</b> <b>7 ½'</b>	<b>SITE:</b> The site is vacant of structures. An intermittent stream crosses or is near the site. <b>NORTH:</b> Vacant land is north of Smith Road and a railroad track. <b>EAST:</b> Vacant land adjoins the site to the east. <b>SOUTH:</b> Vacant land is south of the site to Sand Creek. <b>WEST:</b> Vacant land adjoins the site to the west.
<b>Sable</b> <b>1957</b> <b>7 ½'</b>	<b>SITE:</b> NC <b>NORTH:</b> NC <b>EAST:</b> A trail is to the east beyond intervening vacant land. <b>SOUTH:</b> "Aurora Sewage Disposal" plant is south of the site beyond an intervening vacant parcel. <b>WEST:</b> Denver county line and vacant land are west of the site. The Denver jail is farther west.
<b>Sable</b> <b>1965</b> <b>7 ½'</b>	<b>SITE:</b> NC <b>NORTH:</b> Contours suggest that there has been sand and gravel mining and/or landfilling to the northwest. <b>EAST:</b> NC <b>SOUTH:</b> NC although commercial development is farther southeast. <b>WEST:</b> NC



<b>TABLE 4-3 Historical Topographic Map Review</b>	
<b>Sable</b> <b>1965 photorevised 1971</b> <b>7 ½'</b>	<b>SITE:</b> The north building is on site. <b>NORTH:</b> NC although there are commercial buildings farther north. <b>EAST:</b> NC <b>SOUTH:</b> NC although there is commercial development to the southeast. <b>WEST:</b> NC
<b>Sable</b> <b>1965, photorevised 1979</b> <b>7 ½'</b>	<b>SITE:</b> The south building also is present. <b>NORTH:</b> A building is beyond the railroad and there is additional development in the area. <b>EAST:</b> Buildings are east of the southeast portion of the site and to the southeast. <b>SOUTH:</b> Two buildings are south of the site. <b>WEST:</b> NC
<b>Montbello</b> <b>1965, revised 1994</b> <b>7 ½'</b>	<b>SITE:</b> NC <b>NORTH:</b> The area north is depicted as undifferentiated urban area (UUA) and all details may not be shown. <b>EAST:</b> A building is east of the northeast portion of the site. <b>SOUTH:</b> NC <b>WEST:</b> NC

NC = No change from previous map

No features were observed on site or the adjoining properties that suggested the presence of RECs.

## 5.0 REGULATORY DATABASE REVIEW

Freedom reviewed federal and state environmental database listings compiled by Satisfi Environmental Information (Satisfi) of Greenwood Village, Colorado for the site and facilities within the search radii recommended by ASTM. Identification or confirmation of database listings shown as "unmappable" was out-of-scope. The results of the regulatory database search by Satisfi are included in Appendix B and summarized in the following sections.

To account for the site acreage, a 0.06 mile buffer was established around the center of the site. The standard ASTM search radii were measured from that buffer.

When the following sections refer to "up-gradient, cross or side-gradient and down-gradient," this usage refers only to the topographic gradient which often mirrors actual gradient (actual groundwater gradient, depth and flow directions cannot be confirmed without information obtained from monitoring wells installed on-site and/or nearby).

### 5.1 Site Listings

The site was identified for the following listings:

- Registered Tank – the site was identified as operating a propane tank. This is not a REC for the site.
- RCRA – the site is listed as a Small Quantity Generator (SQG) of hazardous waste. The listing indicated that the facility also was a RCRA Violator. In September 2002, they were cited for land ban requirements and were shown to be in compliance as of December 2002. Because of the nature of the citation,

this listing as a RCRA Violator is not a REC for the site. A further discussion of waste generation at the site is provided in Section 6.2, below.

- **Spill Incident** – the site was identified for a spill of polychlorinated biphenyls (PCBs) in October 1985. Mr. Keeling reported that they researched company files, but no information regarding the spill was identified. The available information in the report suggested that it impacted site soils and may have been cleaned up. Because of the age of the spill, no publicly available files beyond the report were able to be identified. It is likely that the State would have required a clean up of any significant release.

The database search and review of available information indicated that the site is not included in any other federal or state regulatory database listings researched.

## 5.2 Federal Databases

TABLE 5-1 Federal Database Listings for Properties other than the Site		
Database Title and General Description	ASTM Search Radius	No. of Listings
<b>National Priority List:</b> The NPL is the EPA's database of uncontrolled or abandoned hazardous waste sites identified for priority remedial actions under the Superfund program. To be included in the NPL, a site must meet or exceed a predetermined hazard ranking system score, be designated as a state top priority site, or meet three specific criteria set jointly by the US Department of Health and Human Services and the EPA in order to become an NPL site.	1.0 mile	0
<b>CERCLIS Database:</b> The CERCLIS List contains sites, which are either proposed to or on the NPL, or are in the screening and assessment phase for possible inclusion on the NPL. The information on each site includes a history of pre-remedial, remedial, and removal and community relations activities or events at the site, financial funding information for the events, and unrestricted enforcement activities. <b>CERCLIS-NFRAP</b> are facilities removed from the CERCLIS database and designated as requiring No Further Remedial Action Planned. These are facilities where completed investigations have indicated that contamination at the site, if any, was not Serious enough to warrant Federal Superfund action or NPL consideration.	0.5 mile	1
	0.25 mile	1
<b>RCRA Databases:</b> Facilities listed in the RCRA databases are designated as hazardous waste treatment, storage, and disposal (TSD) facilities, Corrective Action Sites (CORRACTS), and hazardous waste generators and other hazardous waste (Other HW) activities. Other HW activities may include former generators, identified non-generators or transporters.	CORRACTS = 1.0 Mile	2
	TSD = 0.5 Mile	0
	Generators = 0.25 Mile	5
	Other HW = 0.25 Mile	5
<b>ERNS Database:</b> This database contains information from spill reports of oil or hazardous substances submitted to federal agencies including the EPA, the U.S. Coast Guard, the National Response Center, and the DOT.	0.25 Mile	2
<b>Activity &amp; Use Limitations (AUL):</b> This listing includes Federal and State databases institutional or engineering controls.	0.5 mile	0

### 5.2.1 Discussion of Federal Database Listings

One CERCLIS facility was identified to the southwest in an area cross- to downgradient from and not adjoining the site. The facility reported underwent a private party clean up and based upon its distance and direction from the site, it is not a REC.

One CERCLIS facility was identified for No Further Remedial Action Planned (NFRAP). It is cross- to downgradient and not adjoining the site. It is not a REC.

Two CORRACTS facilities were identified within the search radius. Neither adjoins the site. One facility at 11602 East 33<sup>rd</sup> Avenue is southeast in an area that may be upgradient. At a distance of 500 feet from the site, it is unlikely to significantly affect the groundwater quality beneath the site. The second facility is to the far northwest in an area to downgradient from the site. It is not a REC for the site.

Five facilities are generators of hazardous waste. None of the facilities adjoin the site. Four facilities are in areas cross- to downgradient from the site, and they are not RECs. One facility is to the southeast, the area generally upgradient. However, it is not identified as a RCRA Violator and has not been referred to the corrective action program. Based upon its distance from the site, it is not a REC.

Five facilities are identified as other than generators of hazardous waste. None adjoin the site. Three of the facilities are in areas cross- to downgradient and they are not RECs for the site. Two facilities were to the southeast, the area generally upgradient, but the facilities no longer or never did generate hazardous waste. They are not RECs for the site.

Two spill incidents were identified within the search radius. They were downgradient and not adjoining the site. They are not considered RECs for the site.

### 5.3 State Databases

TABLE 5-2 State Database Listings for Properties other than the Site		
Database Title and General Description	ASTM Search Radius	No. of Listings
<b>Equivalent Priorities Database/Voluntary Clean Up Program:</b> Although the State does not maintain a list of priority clean up sites similar to the NPL, it does track facilities that have been accepted into the Voluntary Clean Up Program.	0.5 mile	1
<b>Solid Waste Disposal Facility Databases:</b> Several State and County databases were reviewed for information regarding solid waste disposal facilities, which are reported and compiled collectively under this database.	0.5 mile	4
<b>Leaking Tanks (includes leaking underground storage tanks, LUSTs, and leaking ASTs) Database:</b> The State tracks the status of facilities where a release of petroleum hydrocarbons from underground and/or above ground storage tanks has been confirmed or reported.	0.5 mile	21



TABLE 5-2 State Database Listings for Properties other than the Site		
Database Title and General Description	ASTM Search Radius	No. of Listings
<b>Registered Tanks (UST/AST) Databases:</b> The State maintains databases of underground and aboveground storage tank (UST/AST) facilities. These databases do not include information on leaking tank facilities.	0.25 mile	10

### 5.3.1 Discussion of State Database Listings

One VCP application was submitted within the search radius. The facility was not adjoining the site and was to the southwest, an area generally cross-gradient. It is not a REC for the site.

Four solid waste facilities were identified within the search radius. Two facilities adjoin the site, one to the east and one to the west. Available information indicated that the facility adjoining the site to the east was a demolition landfill although it appeared that some methane was present in the past. The report indicated that no methane was present in October 1983. This landfill is cross- to upgradient from the site. In the event that the groundwater at the facility has been impacted, it is possible that groundwater beneath the site could be contaminated. The adjoining property to the west was identified as receiving "domestic refuse, construction debris, liquids, hazardous waste, and industrial waste. However, this fill area is downgradient and any impacts from that facility on the subject site would be expected to be limited. The available information indicates that groundwater monitoring wells and soil samples have been collected from the area and have demonstrated soil and groundwater impacts. Groundwater impacts included volatile organic compounds (VOCs), arsenic and lead. As described in Section 4.6, above, a groundwater study at the subject site identified low concentrations of VOCs and some metals, but no significant impacts were identified. The remaining two facilities are not adjoining the site and are in an area generally upgradient at a distance of about 0.4 mile. Based upon their distance from the site, they are not RECs for the site.

Twenty-one (21) leaking tank facilities were identified within the search radius. None of the identified facilities adjoin the site. Thirteen of the facilities are located in areas cross- to downgradient, and they are not RECs for the site. Eight facilities were identified to the southeast in the area generally upgradient. Of those, all have been approved for regulatory case closure. They are not RECs for the site.

Ten registered tank facilities were identified within the search radius. None of the facilities adjoin the site. Six facilities were identified in areas cross- to downgradient and they are not RECs for the site. Four facilities were to the southeast in the area generally upgradient. All have been removed and they are not RECs for the site.

## 5.4 Agency Interviews

Freedom contacted Mr. Brian Hlavacek of Tri-County Health Department regarding any records of environmental incidents at the site (Pc3a, 11/20/06). According to Mr. Hlavacek, the only information identified was a No Further Action Letter from the State regarding the Phase II conducted in 1999 and summarized in Section 4.6. A copy of that letter is included in Appendix D.

Freedom contacted the Aurora Fire Department concerning environmental responses to the site. The department did not respond Freedom's inquiry (Pc4a, 11/20/06).

## **5.5 Supplemental Searches**

Freedom personnel also searched available information regarding the presence of oil and gas wells and/or production on or adjoining the site. Freedom consulted the Colorado Oil & Gas Conservation Commission's online GIS system available through the State's internet web site. The search indicated that no wells are present within one mile of the site.

Freedom also reviewed the State's database for the presence of mines in the site vicinity. In spite of the known sand and gravel mining, the nearest mine was more than one mile to the west.

## **6.0 SITE RECONNAISSANCE**

A non-invasive site reconnaissance was conducted to observe accessible and representative portions of the site for RECs. As suggested by ASTM, visual evidence of RECs considered included stained soils, stressed vegetation, transformers, evidence of above ground or underground storage tanks, trash and debris, use or storage of hazardous substances or petroleum products.

### **6.1 Site Overview**

On November 3, 2006, Mr. Rick Luce, Environmental Professional, conducted the site reconnaissance for this assessment. Mr. Luce was accompanied during the assessment by Mr. Shaun Keeling, Timminco Corporation's safety manager. He reported that he has been at the plant for 21 years.

The site was observed to be comprised of two buildings, one on the northern portion of the site and one along the southern site boundary. The balance of the site was improved by parking areas, driveways, outdoor storage yards and landscaping. The northern building appeared to be used for administration, fabrication and shipping and receiving. The southern building appeared to be for fabrication and offices.

The facility manufactures magnesium and some aluminum pieces using extrusion technology. In addition, they do milling, cutting and other fabrication and assembly to complete their parts. They operate several large presses, hydraulic pumps and compressor systems and maintain a number of large indoor and outdoor storage areas.

Mr. Keeling stated that no fabricated parts are coated or cleaned at the site. Acid and caustic baths in the south building are for dye cleaning.

Photographic documentation provided in Appendix A was limited to non-production and outdoor areas of the site. Photographs were not permitted in production areas including press, extrusion, and milling areas of the building.

## 6.2 Specific Site Features

TABLE 6-1 Specific Site Features		
Feature	Observed during site visit	Not observed during site visit
Drinking Water Source	X	
Sewage Disposal/Septic	X	
Use or Storage of Hazardous Substances	X	
Use or Storage of Petroleum Products	X	
Aboveground Storage Tanks	X	
Underground Storage Tanks (or ancillary equipment)		X
Surficial Staining or Corrosion	X	
Stressed Vegetation		X
Drums or Other Containers	X	
Transformers	X	
Drains or Sumps		X
Pits, Ponds or Lagoons	X	
Solid Waste Disposal		X
Wastewater Discharges	X	
Water Supply or Monitoring Wells		X

### 6.2.1 Discussion of Observed Features

#### ***Water and Sewage Disposal***

Drinking water and sewage disposal services are provided to the site by the City of Aurora.

#### ***Use and Storage of Hazardous Substances***

Limited chemical use was noted in the north building. Containers of Met-L-X, a fire suppressant were present throughout the building. The material is not hazardous.

A small solvent stand was present in the main shop area of the north building for equipment maintenance. Mr. Keeling reported that Safety-Kleen maintains the stand.

Mr. Keeling reported that they currently have about 10 gallons of tetrachloroethene (PCE) in the quality control laboratory that they use for sample preparation. He reported that they have about 30 gallons stored pending off-site disposal.

Acid and caustic baths were observed in the south building. Mr. Keeling reported that they are emptied periodically and Clean Harbors manages the wastes. 50-pound bags of soda beads also were present in the area to control pH in the baths.

#### ***Use and Storage of Petroleum Products/ASTs***

Oil reservoirs are present on a number of the presses in buildings throughout the site. A large pump room is present in the western portion of the north building that stores the hydraulic oil to run the extrusion equipment. The oil is contained in an approximately 6,000-gallon AST.

A small AST for new oil is present in the south building to supply the press oil reservoirs. In the same area were drums of gear lube. A propane tank is present in the yard between the two buildings.



### ***Surface Staining/Corrosion***

Several areas of the south building appeared to have significant staining on the concrete floors. It appeared to be significant as a result of accumulation over many years. However, no floor drains were in the areas and the staining is not considered a REC for the site.

The concrete in the area of the acid and caustic baths showed some corrosion. Because of the nature of the chemical use in that area, it is not considered a REC.

### ***Drums and Other Containers***

A number of non-hazardous chemicals are used at the site. These included drums of rust inhibitor and an orange biodegradable cleaning solvent.

Numerous empty drums were stored west of the north building in the storage yard.

### ***Transformers***

A pad-mounted transformer was observed on site along the west side of the north building. It was stamped with the notation "contains no PCB". Additional non-PCB transformers were along the north side of the south building. Such transformers, when present, are typically the property of the local electrical utility, and the costs of investigation and remediation, if any, of a release from these utility-owned transformers are the responsibility of the utility company. No evidence of leakage such as discolored transformers or stained concrete were was observed.

### ***Pits***

All of the presses in the north building were located within containment pits. Mr. Keeling reported that in the event of releases of hydraulic fluid, the pits would contain the spills. There are not outlets to the pits. The hydraulic lines for the presses also were located within trenches from the pump room to the containment pits.

### ***Wastewater Discharges***

Mr. Keeling reported that they discharge waste water to the sanitary once it has run through a separator. The City of Aurora permits the discharge.

No features suggesting the presence of RECs for the site were observed.

## **6.3 Adjoining Property Observations**

Observations of adjoining properties (from the site's boundaries and public right-of-ways) were made to identify apparent RECs.

The site is adjoined to the north by Smith Road beyond which is a railroad track. The nearest business is about ¼ mile north of the site and is occupied by Frito-Lay. Moline Street adjoins the site to the east, beyond which are two commercial buildings occupied by multiple tenants. The tenants included multiple automotive repair and one brake service businesses. Adjoining the site to the south is a commercial warehouse building occupied by Russell Stover. Beyond an intervening vacant parcel that has been identified as an old landfill is the Denver County Jail. No evidence of storage or use of hazardous substances or petroleum products was observed on the adjoining properties during the site visit. Based upon field observations, the adjoining properties do not appear to be RECs for the site.

## 7.0 SUMMARY OF FINDINGS

**Historical Information Summary:** The site acreage was undeveloped land in the 1940s and 1950s, but appeared to have been filled in the 1960s in preparation for development. The current north building was constructed in 1969 and historical information indicated that the south building was constructed in 1972. From the time of construction until about 1999, the site was occupied by Dow Chemical's Magnesium Extrusion fabrication plant. Since that time, Timminco has owned the business and continued the operation. Historical operations included some solvent use, and a subsurface investigation was conducted in 1999 at the time of the business sale. The investigation results indicated that low concentrations of volatile organic compounds were detected in the site soils and groundwater, but no detected concentrations exceeded any State or Federal action levels. Several metals were detected in soils and groundwater, but all were below action levels or were also detected in the upgradient wells suggesting an off-site source. The results of the subsurface investigation did not suggest RECs for the site.

The adjoining properties to the east and west were vacant range land in the 1940s and 1950s. Landfilling operations occurred on both properties prior to their current use. By the early 1970s, commercial development of the adjoining property to the east had commenced. It continued into the early 1980s and has had a number of tenants since that time. Landfilling continued into the late 1960s or early 1970s on the adjoining property to the west. It was covered and has been undeveloped since that time. The nearest commercial development north of the site began about the same time as the site development and continued to expand through the 1990s. It has been occupied for many years by Frito Lay. The adjoining property to the south was first developed for commercial use by the early 1970s but the historic tenants were not identified in the city directory research. The adjoining historic property uses are not suspected to represent RECs for the site at this time.

**Site Reconnaissance Summary:** The site is improved by two commercial/industrial buildings. Currently, Timminco operates the facility that has been on site since 1969. Timminco has ceased use of much of the solvent that was identified in the 1999 subsurface investigation report. Currently, a limited number of solvents are used at the site for equipment maintenance. One solvent stand is operated and is maintained by Safety Kleen. Hydraulic are used to drive presses. Hydraulic pumps, flow lines, and presses are operated within areas of secondary containment or within closed trench and pit areas to contain any leaks. Acid and caustic baths are present in the south building and are used to clean dyes used in the fabrication operations. Waste acids and caustics as well as used oils are managed by Clean Harbors. Drummed new oil and used oil is stored inside the south building inside a secondary containment. The outdoor storage areas are used to store raw magnesium and aluminum products and miscellaneous items. No hazardous substances or wastes or petroleum products or wastes are stored outside. The current use is not a REC for the site.

**Regulatory Database Summary:** The site was identified as a registered storage tank facility, a Small Quantity Generator (SQG) of hazardous waste and for a spill in 1985. The tank contains propane and is not a REC for the site. The facility was cited in 2002 for a minor infraction related to their hazardous waste management, but they have not

been referred to the corrective actions program. Their status as an SQG is not a REC for the site. The spill report indicated that the spilled chemical was PCBs and estimated the spilled volume at 10 to 20 gallons. The report indicated that the impacted medium was soil. Timminco personnel stated that they had no record of the spill in their files (it occurred before Timminco bought the site), and because of the age of the spill, the State and Federal agencies have no additional records. The available records suggested that it was cleaned up although there is no documentation available. Because of the magnitude and the age of the spill, it is not considered a REC for the site. The site was not identified on any other state or federal regulatory databases searched.

Regulated facilities adjoined the site to the east and west. Both are former landfill areas. The adjoining area to the east in the area cross- to upgradient was identified as demolition fill although some historic testing identified at least limited methane generation. In the event of groundwater contamination at that location, the groundwater beneath the subject site may be impacted. The facility to the west was identified for domestic fill, as well as other types of disposal. An investigation in that area suggested groundwater impacts. However, the facility is on the downgradient side of the site and should not pose a REC for the site. Several other regulated facilities were identified in the area generally upgradient but not adjoining the site. However, they did not appear to represent RECs for the site. The remaining facilities were located in areas cross- to downgradient and are not considered RECs for the site.

## **8.0 CONCLUSIONS AND RECOMMENDATIONS**

No data gaps were identified related to the collection of historical site use information for this assessment. Although search intervals from the 1930s through the 1960s exceeded 5-year intervals, the site use appeared unchanged during the period except that the site may have been filled prior to construction. However, a subsurface investigation at the site did not identify significant soil or groundwater impacts and that potential is not considered a REC for the site. The data gaps are not considered significant to the outcome of this assessment.

Freedom has performed a Phase I Environmental Site Assessment in general accordance with ASTM E1527-05 and the agreed scope of work for the Timminco property at 10380 Smith Road, Aurora, Colorado. This assessment has revealed no evidence of recognized environmental conditions (RECs) for the site.

With regard to the above-listed Findings and Conclusions, Freedom makes no recommendations for additional assessment at this time.



## **9.0 ENVIRONMENTAL PROFESSIONAL DECLARATIONS**

I declare that, to the best of my professional knowledge and belief, all persons involved in the preparation of this assessment meet the definition of Environmental Professional as defined in §312.10 of 40 CFR Part 312. All persons associated with the preparation of this assessment have the specific qualifications based on education, training, and experience to assess a property to the nature, history, and setting of the subject property. Freedom has developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312. The qualifications of those persons associated with the preparation of this assessment are included in Appendix E.

The signature on the transmittal page of this report affirms this to be so.

## REFERENCES

Department of Agriculture, Soil Conservation Service, Soil Survey of Adams County, Colorado, John J. Sampson *et al.*, October 1974.

Department of Interior, US Geological Survey, Geologic Map of Colorado, compiled by Ogden Tweto, 1979.

Department of Interior, US Geological Survey, Groundwater Atlas of the United States, Segment 2, Hydrological Investigation Series Map HA 730 C, 1997.

Department of Interior, US Geological Survey, 7.5 minute Topographic Quadrangle Map of Long Branch, Colorado, 1948 (surveyed 1938).

Department of Interior, US Geological Survey, 7.5 minute Topographic Quadrangle Map of Montbello (formerly Sable), Colorado, 1965, revised 1994.

Department of Interior, US Geological Survey, 7.5 minute Topographic Quadrangle Map of Sable, Colorado, 1957.

Department of Interior, US Geological Survey, 7.5 minute Topographic Quadrangle Map of Sable, Colorado, 1965.

Department of Interior, US Geological Survey, 7.5 minute Topographic Quadrangle Map of Sable, Colorado, 1965, photorevised 1971.

Department of Interior, US Geological Survey, 7.5 minute Topographic Quadrangle Map of Sable, Colorado, 1965, photorevised 1979.

Personal Communication, 1a, Mr. Scott Churchley, Realtor, December 18, 2006.

Personal Communication, 2a, Mr. Shaun Keeling, Timminco Representative, November 3, 2006.

Personal Communication, 2b, Mr. Shaun Keeling, Timminco Representative, December 6, 2006.

Personal Communication, 3a, Mr. Brian Hlavacek, Tri-County Health Department, November 20, 2006.

Personal Communication, 4a, Aurora Fire Department, November 20, 2006.

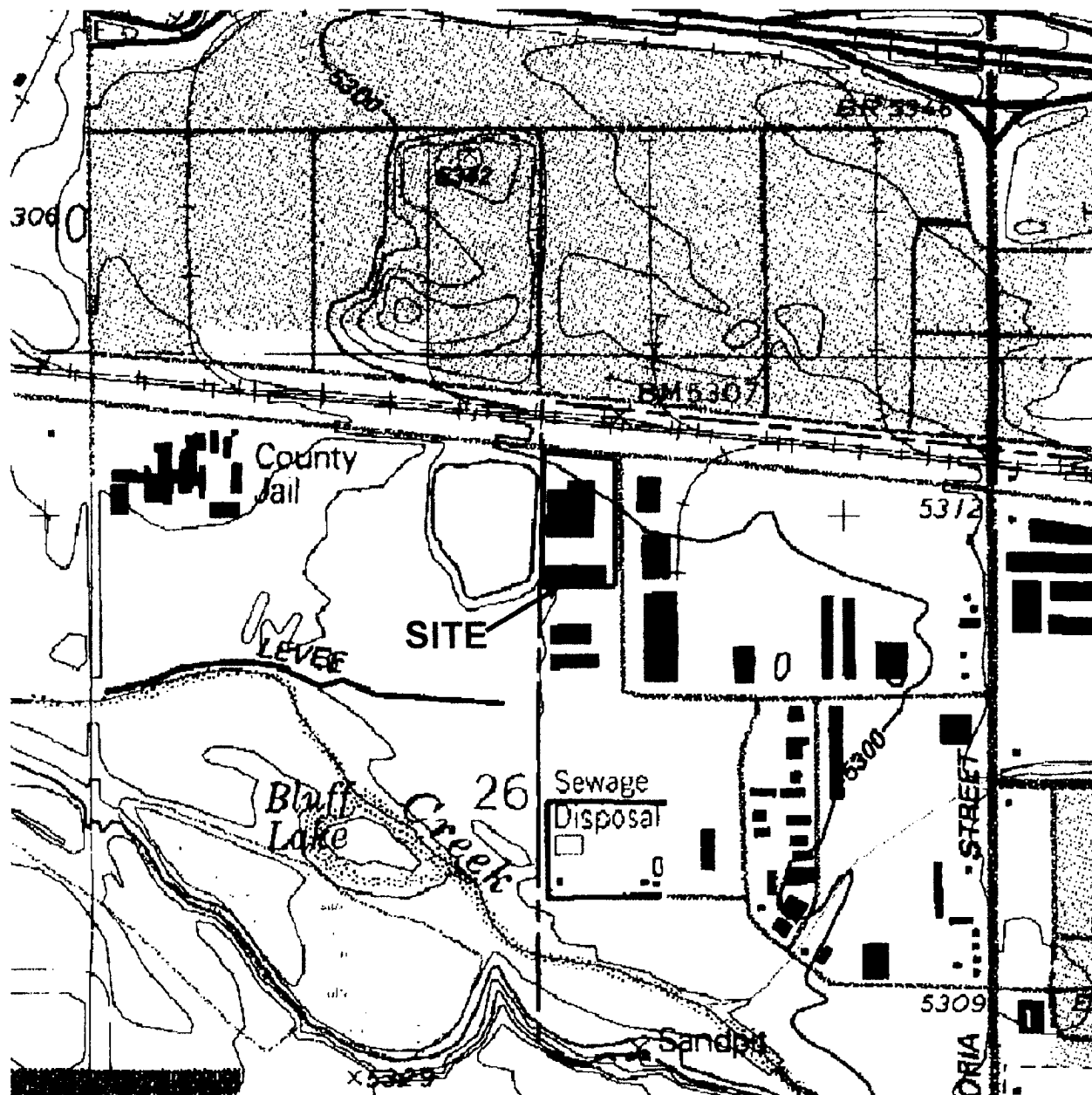
Satisfi Environmental Information-Environmental Data Search, Report No. S302041, November 1, 2006.

Satisfi Environmental Information-City Directory Research, November 1, 2006.

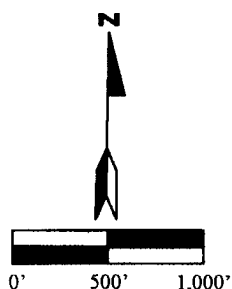
URS Greiner Woodward Clyde, Phase II Environmental Investigation, Dow Chemical's Magnesium Extrusion Facility, 10380 Smith Road, January 21, 1999.



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S



SOURCE:  
USGS MAP, MONTBELLO, CO  
QUADRANGLE, 7.5 MINUTE SERIES,  
1965, REVISED 1994.

CONTOUR INTERVAL: 10'

## FIGURE 1 SITE VICINITY MAP

TIMMINCO PROPERTY  
11380 SMITH ROAD  
AURORA, COLORADO  
PROJECT NO. 0606-076

**FREEDOM ENVIRONMENTAL  
CONSULTANTS, INC.**





SCALE UNKNOWN

Source: Google Earth

## FIGURE 2

### SITE PLAN MAP – AERIAL PHOTO

TIMMINCO PROPERTY  
10380 SMITH ROAD  
AURORA, COLORADO  
PROJECT NO. 0606-076

**FREEDOM ENVIRONMENTAL  
CONSULTANTS, INC.**

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Photo #1: View southeast toward the main (north) site building.



Photo #2: View southwest of the north building. The parking lot in the foreground is part of the site. The building in the distance at the far left is the south building.



Photo #3: View south in the western portion of the outdoor storage yard. The south building is beyond the yard. The awning at the left is on the southwest portion of the north building.



Photo #4: View southeast toward the covered storage area. The silver rolls are extruded magnesium that is ready for further use.





Photo #5: Raw metal product and scrap metal in the drums.



Photo #6: Shipping and receiving area of the north building.



Photo #7: Oil storage, lube, and sorbant storage in the north building.



Photo #8: Drums of oil, lube, rust inhibitor and other chemicals within secondary containment in the south building. There was significant staining on the concrete floor, but it is not considered a REC



Photo #9: Oil and used oil storage adjoining the press room in the south building.



Photo #10: Drums of chemicals next to the acid and caustic baths. The back wall of the baths are at the left. (No good photos of the actual baths were usable).



Photo #11: View north of from the northern parking lot. Smith Road is in front of the railroad tracks and commercial buildings are beyond.



Photo #12: View east of the multi-tenant commercial building adjoining the northern portion of the site to the east. Moline Street is beyond the site parking lot.





Photo #13: View northwest of the adjoining commercial building occupied by Russell Stover Candies that is south of the site. The south site building is visible in the distance at the far right.



Photo #14: View west from the north parking lot toward the adjoining properties. Note the sudden change in elevation that identifies the adjoining land as an old landfill. The Denver County Jail is in the distance.

## **REGULATORY AND TECHNICAL ACRONYMS**

<b>AAI</b>	All Appropriate Inquiry
<b>ACBM</b>	Asbestos-Containing Building Material
<b>AHERA</b>	Asbestos Hazard Emergency Response Act
<b>AST</b>	Aboveground Storage Tank
<b>ASTM</b>	American Society for Testing and Materials
<b>CERCLIS</b>	Comprehensive Environmental Response, Compensation and Liability Information System
<b>CERC-NFRAP</b>	CERCLIS facility where No Further Remedial Action Planned
<b>CDPHE</b>	Colorado Department of Public Health & Environment
<b>CORRACTS</b>	RCRA Corrective Action Sites
<b>EPA</b>	Environmental Protection Agency
<b>ERNS</b>	Emergency Response Notification System
<b>ESA</b>	Environmental Site Assessment
<b>HREC</b>	Historical Recognized Environmental Condition, as defined by ASTM
<b>LUST</b>	Leaking Underground Storage Tank
<b>NPDES</b>	National Pollutant Discharge Elimination System
<b>NPL</b>	National Priorities List
<b>OGCC</b>	Oil & Gas Conservation Commission
<b>OPS</b>	Division of Oil and Public Safety, Colorado Department of Labor & Employment (formerly the Oil Inspection Section, OIS)
<b>PCB</b>	Polychlorinated Biphenyl
<b>RCRA</b>	Resource Conservation and Recovery Act
<b>REC</b>	Recognized Environmental Condition, as defined by ASTM
<b>TRIS</b>	Toxic Release Inventory System
<b>USDA</b>	United States Department of Agriculture
<b>USGS</b>	United States Geological Survey
<b>UST</b>	Underground Storage Tank
<b>VCP</b>	Voluntary Clean Up Program

**RECORD OF COMMUNICATION**

**Contact:** Mr. Scott Churchley, Liberty-Greenfield

**Date:** 12/18/06

**Time:** 11:15 AM

**Project No.:** 0606-076

**Contact Telephone No.:**

**Subject:** Site Ownership

**Results:** Freedom spoke with Mr. Churchley about the site history. He reported that the site is owned by a number of trusts and other interests. He stated that the majority interest is held by Neuropa Limited. He said that interests and periods of ownership have varied, but in general the owners have held the property for about 30 years. He further indicated that the individual that manages the interest is not involved in the day-to-day operations and is unlikely to have significant ownership and operational history information.

**Recorded by:** Rick Luce

**Of:** FEC

**RECORD OF COMMUNICATION**

**Contact:** Mr. Shaun Keeling, Timminco

**Date:** 11/3/06

**Time:** 9:30 AM

**Project No.:** 0606-076

**Contact Telephone No.:**

**Subject:** Site Operations

**Results:** Freedom spoke with Mr. Keeling, Timminco's Safety and Environmental Manager. He indicated that he had been at the site for 21 years (1985 +/-). He reported that Dow Chemical used to own the business from the time of site development in 1969 until the late 1990s. Timminco bought the business at that time. He reported that they do mostly magnesium and some aluminum extrusion fabrication as well as some milling and cutting operations. He stated that they do not do cleaning or coating of their fabricated parts.

He indicated that they use relatively few chemicals. They use hydraulic oil to run the presses and lube oil for many of the machines. Not much used oil is generated. The majority of oil is stored in the pump room in the north building in a large AST. The presses are contained within closed pits in the event of a leak and flow lines from the pump room to the presses are in trenches for the same reason.

Air compressors provide air for the building and are located in a room just north of the pump room.

They have a limited solvent use with one stand in the main shop in the north building. It is maintained by Safety Kleen. Acids are used to clean the magnesium dyes and



caustics are used to clean the aluminum dyes. Waste acids and caustics are managed by Clean Harbors.

Timminco discharges wastewater to the sanitary sewer system. Mr. Keeling reported that the wastewater is run through a separator prior to the discharge and the City of Aurora permits the discharge.

Mr. Keeling stated that he was not aware of any USTs at the site. He identified ASTs related to the pump room and oil storage in the shop are of the south building. He was not aware of any environmental problems for the site that might be considered a REC.

**Recorded by:** Rick Luce

**Of:** FEC

**Rick Luce**

---

**From:** Keeling, Shaun [SKeeling@Timminco.com]  
**Sent:** Wednesday, December 06, 2006 9:12 AM  
**To:** Rick Luce  
**Subject:** RE: Timminco Phase I

*We are using small quantities of tetrachlorethene in preparing samples for testing in our quality lab. We currently have less than 10 unused gallons on hand and about 30 gallons awaiting disposal. This is a typical amount we would have. Disposal is taken care of through Clean Harbors on an as needed basis.*

Shaun

---

**From:** Rick Luce [mailto:r.luce@comcast.net]  
**Sent:** Tuesday, December 05, 2006 2:44 PM  
**To:** Keeling, Shaun  
**Subject:** RE: Timminco Phase I

Sorry, PCE is short for tetrachloroethene (aka perchloroethene). It is a chlorinated solvent with many industrial uses.

Rick

---

**From:** Keeling, Shaun [mailto:SKeeling@Timminco.com]  
**Sent:** Tuesday, December 05, 2006 1:23 PM  
**To:** Rick Luce  
**Cc:** Churchley, Scott  
**Subject:** RE: Timminco Phase I

Rick,

*I apologize for the delay in response. I have copies of the 1999 reports from URS Greiner Woodward Clyde and the efforts to resolve reported issues. I also have a letter of closure from the state regarding the 2002 compliance inspection. Please let me know how you wish to receive the above documentation. I would suggest that I mail it I mail it to you as there are quite a few pages.*

*I am not familiar with the term "PCE". Can you please enlighten me so that I may obtain the info you request.*

Thanks,

Shaun

---

12/20/2006

**From:** Rick Luce [mailto:r.luce@comcast.net]  
**Sent:** Tuesday, December 05, 2006 10:50 AM  
**To:** Keeling, Shaun  
**Cc:** 'Churchley, Scott'  
**Subject:** Timminco Phase I

Shaun,

I didn't hear back from you so I went to CDPHE and reviewed the available files. I looked at a copy of the Phase II prepare by URS in January 1999. They referenced waste PCE accumulating in the lab (is that right?) and discovered a low concentration of PCE in the soils near the 1800 ton press in the south building. Can you tell me whether Timminco is still using PCE and if so what for? Also are they still accumulating it?

Rick Luce  
***Freedom Environmental Consultants, Inc.***  
12808 West 56th Place  
Arvada, CO 80002-1330  
(303) 940-1410  
(303) 940-1420 Facsimile  
[r.luce@comcast.net](mailto:r.luce@comcast.net)

12/20/2006

FROM :

FAX NO. : 303-940-1420

Nov. 20 2006 03:44PM P1

P. J.

**FREEDOM ENVIRONMENTAL  
CONSULTANTS, INC.**

12808 West 56<sup>th</sup> Place  
Arvada, CO 80002-1330  
Telephone: (303) 940-1410  
Facsimile: (303) 940-1420

November 20, 2006

Mr. Brian Hlavacek  
Tri-County Department of Health

**BY FACSIMILE TRANSMISSION ONLY**  
(303) 367-8813

**Subject:** Request for File Review Information

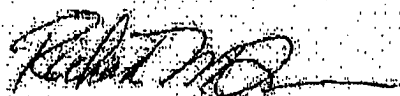
Dear Mr. Hlavacek:

Freedom Environmental Consultants is currently conducting a Phase I Environmental Site Assessment for the property listed below. We respectfully request available information related to any environmental issues known by you and pertaining to the site.

Dow Chemical also known as Timminco Corporation  
13080 Smith Road, 3555 and 3595 Moline Street  
Aurora, CO

If you have any questions, please feel free to contact me by telephone at (303) 940-1410 or facsimile at (303) 940-1420. I can also receive information by email at [r.luce@comcast.net](mailto:r.luce@comcast.net).

Sincerely,  
**FREEDOM ENVIRONMENTAL CONSULTANTS, INC.**



Richard M. Luce  
President & Principal Geologist

Approved B. Hlavacek 11/21/06



## STATE OF COLORADO

Bill Owens, Governor  
Jane E. Norton, Executive Director

*Dedicated to protecting and improving the health and environment of the people of Colorado*

**HAZARDOUS MATERIALS AND WASTE MANAGEMENT DIVISION**

<http://www.cdphe.state.co.us/hm/>

4300 Cherry Creek Dr. S.  
Denver, Colorado 80246-1530  
Phone (303) 692-3300  
Fax (303) 759-5355

222 S. 6th Street, Room 232  
Grand Junction, Colorado 81501-2768  
Phone (970) 248-7164  
Fax (970) 248-7198



Colorado Department  
of Public Health  
and Environment

February 9, 1999

Ben Baker, Remediation Leader  
The Dow Chemical Company  
2020 Dow Center  
Midland, MI 48674

Re: No Further Action at Dow Chemical Magnesium Fabricated Products Facility,  
11380 E. Smith Road, Aurora, Adams County, Colorado


Dear Mr. Baker:

The Hazardous Materials and Waste Management Division of the Department of Public Health and Environment (the Division) has reviewed the report "Phase II Investigation Report for the Dow Chemical Magnesium Extrusion Facility, Aurora, Colorado" dated January 1999, prepared for Dow Chemical Company by URS Greiner Woodward Clyde. Soil and ground water samples were recovered from 16 locations around the site. Although some Volatile Organic Compounds (VOCs) were detected in several samples, all results were below Colorado Groundwater Standards (Regulation No. 41) and the Division's proposed Soil Remediation Objective concentrations. Petroleum hydrocarbons were detected in three isolated areas. Certain VOCs are no longer used at the facility, and the entire site is paved.

Based on the information provided, the Division requires no further action and allows closure for this site. However, please be aware that this letter does not relieve the property owner of liability or need for possible further actions should problems arise from contamination remaining on site.

Should you have any questions, I may be reached at (303) 692-3455.

Sincerely,

  
J. Peter Laux  
Geologist, Solid Waste Unit  
Compliance Program

cc: Michael Liuzzi, CDPHE-WQCD  
Bruce Wilson, Tri-County Health Department

File SW/ADM/DOW - 4A

RECEIVED

FEB 17 1999

TRI-COUNTY HEALTH DEPARTMENT

## RECORD OF COMMUNICATION

**Contact:** Aurora Fire Department

**Date:** 11/20/06

**Time:** 10:00 AM

**Project No.:** 0606-076

**Contact Telephone No.:**

**Subject:** Environmental Incidents

**Results:** Freedom spoke with an unidentified woman in the records section for the Aurora Fire Department. Freedom requested information regarding environmental incidents or hazardous materials responses to the site including 10380 Smith Road, and 3555 and 3595 Moline Street. The woman indicated that the research would take a while to complete and they would respond. As of the date of this report, no response was received.

**Recorded by:** Rick Luce

**Of:** FEC

**USER QUESTIONNAIRE for PHASE I ESAs**

AS REQUIRED by new ASTM Standard E1527-05 (published November, 2005)

User: Neurologia Limited et al From: Rick Luce  
 Contact: J. HAVAS At: Freedom Environmental Consultants  
 Fax: (514) 849-3447 Pages: \_\_\_\_\_  
 Phone: (514) 842-3911 Date: \_\_\_\_\_  
 Site Name: 11380 Smith Road, Aurora, CO  
 Address: \_\_\_\_\_

In order to qualify for one of the *Landowner Liability Protections* offered by the Small Business Liability Relief and Brownfields Revitalization Act of 2001 (the Brownfields Amendments), the User must provide the following information, if available, to Freedom Environmental's Environmental Professional. Failure to provide this information could result in the determination that "all appropriate inquiry" is not complete.

Please fill in this form to the best of your ability, explaining any Yes answers on a separate sheet of paper. Without these answers, our report will note that the Phase I is incomplete, and your Landowner Liability Protections could be at risk. We need these answers before we conduct the site visit.

1. **Environmental Cleanup Liens that are filed or recorded against the site.** ASTM requires the User to check for environmental liens that may be filed or recorded against the subject property under federal, tribal, state or local law. In Colorado, such liens might be listed in the "exceptions to coverage" in the property's title insurance commitment or policy.

Have you checked for these environmental cleanup liens?

☐ Yes ☒ No

Are you aware of any such liens against the subject property?

☐ Yes ☒ No

2. **Activity and Use Limitations (AULs) that are in place or filed or recorded in a registry.** These include engineering controls (e.g., slurry walls, caps) and land use restrictions or institutional controls (e.g., deed restrictions, covenants) that may be in place at the site or filed under federal, tribal, state or local law.

Are you aware of any possible AULs involving the subject site?

☐ Yes ☒ No

3. **Specialized Knowledge.** This involves personal knowledge or experience related to the subject property or nearby properties. For example, if you are involved in the same line of business as the current or former occupants of the property or an adjoining property, you would probably know of any chemicals, oil, degreasers, gasoline, or other hazardous substances commonly used in that type of business.

Do you have any specialized knowledge that might indicate the past or present use of such substances on the subject or nearby properties?

☐ Yes ☒ No

4. **Relationship of the purchase price to the Fair Market Value of the property if it were not contaminated.** Does the purchase price being paid for this property reasonably reflect the FMV of the site? If you conclude that there is a difference, have you considered whether the lower price is because contamination is known or believed to be present at the site? Please note that this question does not require an appraisal of the property.

Is the purchase price significantly below fair market value?

☐ Yes ☐ No

If yes, is it likely that the differential relates to the presence of contamination?

☐ Yes ☐ No

5. **Obvious Indicators.** As the User of this ESA, based on your knowledge and experience related to the site, are there any obvious indicators that point to the presence or likely presence of contamination at the site?

Do you know of any obvious indicators of possible contamination on or near the site?

☐ Yes ☐ No

6. **Common Knowledge.** Are you aware of commonly known or reasonably ascertainable information about the property that would help Freedom Environmental personnel to identify conditions indicative of releases or threatened releases? Please use a separate sheet if necessary.

a. Do you know the past uses of the site?: Yes - Fabrication of  
Magnesium components

b. Do you know specific chemicals that are present or may have been present at the site?: No

c. Do you know of spills or other chemical releases that have taken place at the site?: No

d. Do you know of any environmental cleanups that have taken place at the site?: No

  
Your Signature

27/01/06  
Date

# of separate sheets attached: \_\_\_\_\_  
Explain Yes answers on a separate sheet.



**FREEDOM ENVIRONMENTAL  
CONSULTANTS, INC.**

12808 West 56<sup>th</sup> Place  
Arvada, CO 80002-1330  
Telephone: (303) 940-1410  
Facsimile: (303) 940-1420

November 27, 2006

Ms. Diana Huber  
Colorado Department of Public Health & Environment

**BY FACSIMILE TRANSMISSION ONLY**  
(303) 759-5355

Subject: Request for File Review

Dear Ms. Huber:

Freedom Environmental Consultants is currently conducting an environmental review in the vicinity of the three facilities listed below. We respectfully request permission to review the available files related to environmental investigations at this location.

Dow Chemical or Timminco  
10380 Smith Road, 3555 or 3595 Moline Street (all the same property)  
Aurora, CO

If you have any questions, please feel free to contact me by telephone at (303) 940-1410 or facsimile at (303) 940-1420.

Sincerely,  
**FREEDOM ENVIRONMENTAL CONSULTANTS, INC.**



Richard M. Luce  
President & Principal Geologist

## **1.1 PURPOSE AND SCOPE**

Woodward-Clyde International Americas (Woodward-Clyde) was contracted by Dow Chemical Company USA (Dow) to perform a limited Phase II Environmental Investigation at Dow's Magnesium Extrusion Facility located at 11380 East Smith Road, Aurora, Colorado (Figure 1-1). The Phase II investigation was performed to assist Dow with their plans to sell the facility. The technical approach for the investigation was based upon Woodward-Clyde's proposal to Dow dated April 28, 1998 (Woodward-Clyde 1998a).

The Phase II field investigation included collection and analysis of soil and groundwater samples at the extrusion press pits, the former Otis operations area, the eastern boundary of the suspected off-site landfill, the drum storage area, and upgradient and downgradient groundwater quality at the property boundary.

Information collected and interpretations made regarding soil and groundwater conditions at the site are presented in the following sections of this document. On June 29, 1998, Dow notified CDPHE in writing of the potential for a release to groundwater beneath their facility. This report was prepared in response to the Colorado Department of Public Health and Environment (CDPHE) letter to Dow (dated August 6, 1998) requesting more information on conditions at the site. The facility was sold to Timminco Corporation in July 1998.

## **1.2 REPORT ORGANIZATION**

This report discusses the Phase II investigation results and provides conclusions. This report is organized as follows:

- Section 1.0 - Introduction - The purpose and scope of the Phase II investigation are presented in this section, along with information on facility history and operations.
- Section 2.0 - Phase II Field Investigation - This section discusses the field work associated with the Phase II activities, including soil and groundwater sampling, QA/QC, and project documentation..
- Section 3.0 - Hydrogeologic Setting - This section presents a discussion of the physical characteristics of the site, including geologic and hydrogeologic conditions based on soil borings drilled during the investigation.
- Section 4.0 - Laboratory Analytical Results - This section presents the laboratory analytical results for soil and groundwater samples.
- Section 5.0 - Comparison of Analytical Results to Regulatory Standards and Goals - This section compares the laboratory analytical results for soil and groundwater samples to applicable regulatory standards.
- Section 6.0 - Conclusions - This section presents conclusions based on the findings of the Phase II investigation.
- Section 7.0 - Limitations - Limitations associated with the Phase II report.
- Section 8.0 - References - This section presents references used in preparation of this report.

### **1.3 FACILITY HISTORY AND OPERATIONS**

The Dow Chemical Magnesium fabrication facility is situated on an approximate 5-acre tract of land which is leased by Dow. The property and buildings are owned by Samuel Sokoloff et al. and Dow's lease on the property extends to August 21, 1999.

The entire property has been developed for operations at the site. The facility consists of two buildings. These include the administration/fabrication building and the extrusion building. The site also has a storage yard between the two buildings.

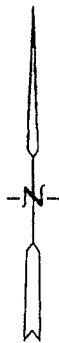
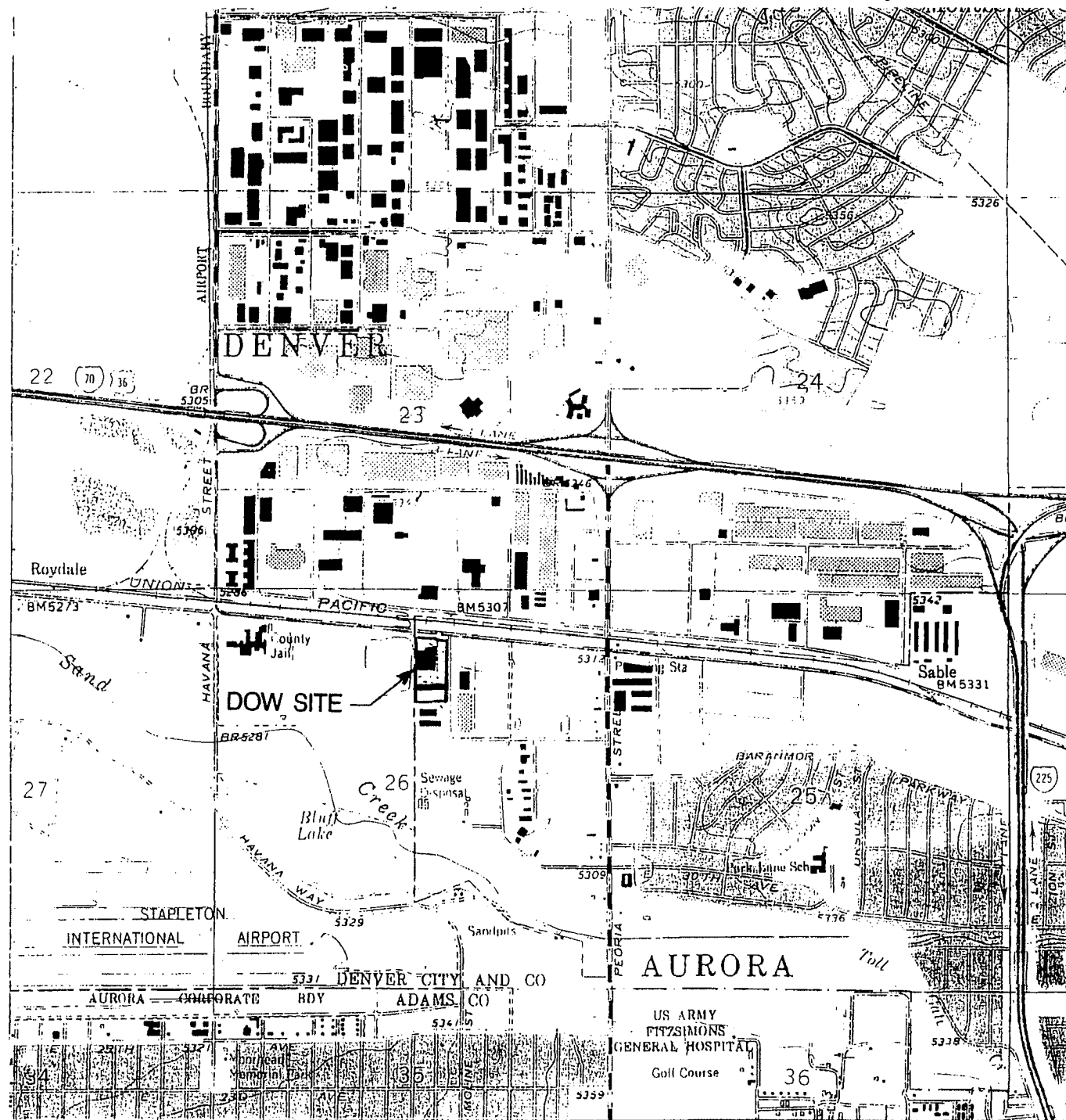
The land use around the Dow facility is of commercial and light industrial nature. Located to the west is the Denver County jail. To the south is a distribution facility and to the east, across Moline Avenue are several local businesses and warehouses. To the north, across Smith Road is a railroad right-of-way with a Frito-Lay facility beyond the railroad tracks.

Dow originally constructed the facility in 1969. The original building constructed in 1969 was the extrusion building. In 1972, the original machine shop was constructed. Beginning in the mid-1970s, the machine shop was leased to Otis Elevator for use as an engineering and fabrication facility. Dow took back the original machine shop in 1986 and converted it to administrative offices and the fabrication building.

The magnesium extrusion facility processes approximately 15 million pounds of magnesium per year. The manufacturing activities occur within both buildings at the site. Raw materials consisting of magnesium ingots and billets are brought in by truck and by rail car and are stored in the yard area or in the warehouse area. Seventeen inch diameter ingots are extruded through the 4,200 ton press to form 7-inch, 8-inch, or 9-inch diameter poles. These poles are cut into billets. The billets are extruded through the 1,800-ton press into various shapes and profiles. These shapes or profiles may be shipped directly to the customer or they may be sent to fabrication for further processing.

Fabrication includes processes such as machining and the installation of caps and other plastic components. All machining at the facility consists of dry machining. No cutting fluids are used at the facility. Products are shipped to customers or distribution sites on common carrier trucks or customer-owned trucks.

The facility operates 24 hours per day and 365 days per year. The facility employs approximately 70 people and operates four shifts. The facility employs a small number of contractors in various roles at the site. Timminco Corporation bought the facility from Dow in July 1998, and the plant continues to operate in much the same way as it did under Dow ownership.



SOURCE: USGS SABLE 7.5 MINUTE QUADRANGLE

0 1000 2000 4000  
SCALE IN FEET

Job No. : 24632

Prepared by : DAK

Date : 6/4/98

## SITE LOCATION MAP

DOW CHEMICAL COMPANY, USA  
MAGNESIUM EXTRUSION FACILITY

FIG. 1-1



The Phase II field investigation focused on assessing the potential presence of contaminants in soil and groundwater at the Dow Magnesium Extrusion Facility. This was accomplished through collection and laboratory analysis of soil and groundwater samples at 16 locations. A summary of borehole drilling and monitoring well sampling activities is presented in Table 2-1. Locations of the monitoring wells and soil borings are shown on Figure 2-1. Two field efforts were completed during the Phase II investigation:

- April 30 to May 1, 1998 - This effort included Property Boundary Well Installation (installation and sampling of three temporary monitoring wells),
- May 12 to 15, 1998 - This effort included: 1) Property Boundary Well Installation (installation and sampling of one additional temporary monitoring well), 2), Extrusion Press Pits (installation and sampling of five temporary monitoring wells) and Former Otis Operations Area Investigation (drilling and sampling of three soil borings), 3), Suspected Landfill Eastern Boundary Investigation (installation and sampling of two temporary monitoring wells), and 4), Drum Storage Area Investigation (drilling and sampling of two soil borings).

## **2.1 DRILLING AND SAMPLING ACTIVITIES**

A discussion of drilling and sampling activities is presented below. Drilling and well installation procedures are provided in Appendix A.

### **Property Boundary Well Installation**

To evaluate hydrogeologic conditions (i.e., specifically groundwater occurrence, flow direction, and quality) at the facility boundary, three geoprobe temporary monitoring wells were installed and sampled (Figure 2-1). The upgradient monitoring well (DMW-03), installed along the south side of the mill building, was driven to 17.2 feet bgs. The two downgradient monitoring wells (DMW-01 and DMW-02) were installed along the north side of the north parking lot (DMW-01 was driven to 33.0 feet bgs) and along the fenceline west-southwest of the main building (DMW-02 was driven to 21.0 feet bgs). Based on initial groundwater flow direction results from these monitoring wells, a fourth property boundary monitoring well (DMW-10 located near the northeast corner of the mill building) was driven to 26.0 feet bgs and sampled.

Based on soil screening results shown in Table 2-2 (i.e., photoionization detector[PID] headspace readings less than 2.0 parts per million by volume [ppmv]) and no evidence of visual staining or odors, no soil samples were sent to the laboratory for chemical analysis from the four borings. Four groundwater samples (one from each monitoring well) were collected and analyzed for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), total recoverable petroleum hydrocarbons (TRPH), and target analyte list (TAL) metals.

### **Extrusion Press Pits and Former Otis Operations Area Investigation**

In order to assess potential impacts from the extrusion press pits, five geoprobe temporary monitoring wells were installed downgradient of the three press pits (4200-ton in main building, 1800-ton and 500-ton in mill building) based on the direction of groundwater flow (northwest) determined during the property boundary well installation task. Two monitoring wells (DMW-05 and DMW-06) were installed near the 4200-ton press in main building west of the pit

(DMW-05 was driven to 33.5 feet bgs) and northwest of the pit (DMW-06 was driven to 34.0 feet bgs). Two monitoring wells (DMW-08 and DMW-09) were installed near the 1800-ton press in the mill building, one northwest of the pit (DMW-08 was driven to 18.0 feet bgs) and the other north of the pit (DMW-09 was driven to 19.0 feet bgs). One monitoring well (DMW-07), installed near the 500 ton press in the mill building northwest of the metal berm, was driven to 19.5 feet bgs).

Based on soil screening results, six soil samples (one each from borings DMW-05, DMW-06, DMW-07, DMW-09 and two from boring DMW-08) were sent to the laboratory and analyzed for VOCs, SVOCs, TRPH, and TAL metals (Table 2-2). Five groundwater samples (one from each monitoring well) were collected and analyzed for VOCs, SVOCs, TRPH, and dissolved TAL metals.

Three soil borings were placed inside the main building in the area where Otis Elevators formerly operated (Figure 2-1). DSB-01, located east of the electrical room in the northern portion of the former Otis area, was driven to 27.0 feet bgs. DSB-02, located east of the pump room in the middle portion of the former Otis area, was driven to 27.0 feet bgs. DSB-03, located south of the oven in the southern portion of the former Otis area, was driven to 26.5 feet bgs.

Based on soil screening results (Table 2-2), four soil samples (one each from borings DSB-01 and DSB-03 and two from boring DSB-02) were sent to the laboratory and analyzed for VOCs, SVOCs, TRPH, and TAL metals (Table 2-2). Three one-time groundwater grab samples were collected (one from each boring) and analyzed for VOCs, SVOCs, TRPH, and dissolved TAL metals.

#### **Suspected Landfill Eastern Boundary Investigation**

In order to evaluate potential impacts from the suspected landfill area located offsite and west of the facility, two geoprobe temporary monitoring wells were installed and sampled (Figure 2-1). One well (DMW04), installed along the western property boundary near the northwest corner of the main building, was driven to 35.0 feet bgs. The second well (DMW-11), installed along the fence on the western property boundary due west of the pump room in the main building, was driven to 26.8 feet bgs.

Based on soil screening results, two soil samples (one from each boring) were sent to the laboratory and analyzed for VOCs, SVOCs, TRPH, and TAL metals (Table 2-2). Two groundwater samples were collected (one from each monitoring well) and analyzed for VOCs, SVOCs, TRPH, and dissolved TAL metals.

#### **Drum Storage Area Investigation**

In order to assess potential impacts from the drum storage area, two soil borings (DSB-04 and DSB-05) were placed in the area where empty hydraulic oil drums are temporarily stored. DSB-04, located close to the main building near the center of the drum storage area, was driven to 8 feet bgs. DSB-05, located near a surficial stain close to the fence, was also driven to 8 feet bgs. Based on soil screening results, two soil samples (one from each boring) were sent to the laboratory and analyzed for VOCs, SVOCs, TRPH, and TAL metals (Table 2-2).

A summary of monitoring well construction and well development is provided in Tables 2-3 and 2-4 respectively. Field boring logs and location survey data are presented in Appendix B.

### **2.1.1 Soil Sampling**

Soil samples for laboratory analysis were selected based on either elevated headspace readings or evidence of visual contamination (i.e., either the presence of staining or odor). When soil samples could not be selected based on headspace or visual contamination, the soil sample collected at a depth interval immediately below the feature of interest was sent into the laboratory for analysis. A total of 14 soil samples were collected for laboratory analysis from 6 monitoring well and 5 soil borings. No soil samples from the four property boundary monitoring wells were sent for laboratory analysis.

Sample labels were filled out and affixed to sample bottles. The following laboratory supplied sample bottles were filled:

- 1 - 4-ounce glass jar for volatile organic compounds
- 1 - 16-ounce glass jar for semivolatile organic compounds, total recoverable petroleum hydrocarbons, and total TAL metals.

All soil samples were placed in a cooler with ice and kept at 4°C until they were hand delivered to Quanterra Environmental Services Laboratory in Arvada, Colorado. A chain-of-custody (COC) record was filled out in the field and placed in the cooler. Copies of COCs are contained in Appendix C. Copies of field sampling data sheets for each soil sample sent to the laboratory are contained in Appendix D.

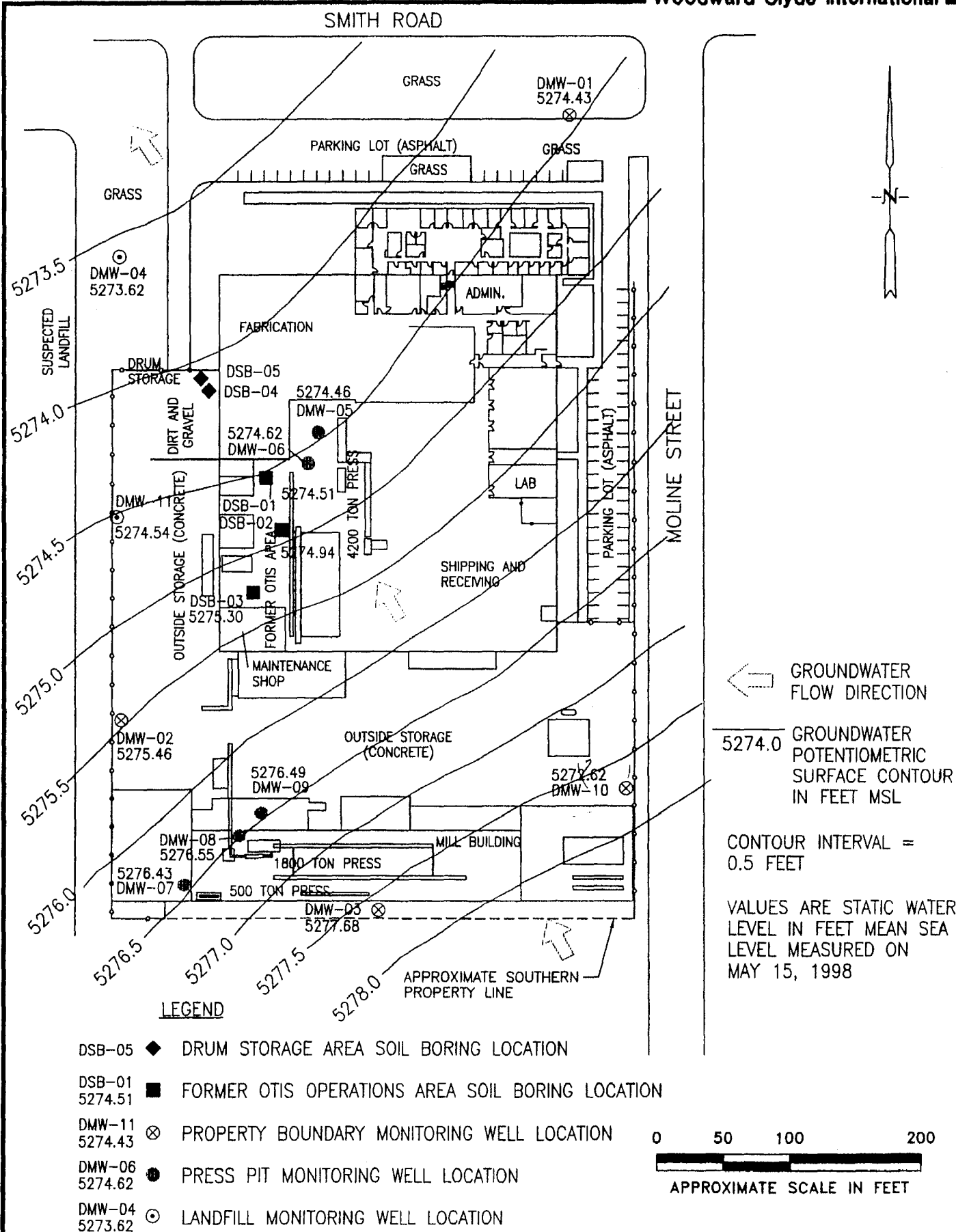
### **2.1.2 Groundwater Sampling**

Groundwater sampling of the three property boundary monitoring wells was performed on May 1, 1998, while the other eight monitoring wells and three soil borings were sampled from May 12 to 15, 1998. Sample bottles for all analyses were provided by the laboratory. Equipment used for groundwater sampling such as bailers and water level probes was decontaminated prior to developing and sampling and between each monitoring well.

Samples for chemical analysis were obtained after purging was completed. The samples were collected below the water table from within the well screen interval using a peristaltic pump. Sample labels were filled out and affixed to sample bottles. The following laboratory supplied sample bottles were filled:

- 3 - 40-ml glass vials for volatile organic compounds
- 2 - 1 liter amber glass bottles for semivolatile organic compounds
- 2 - 1 liter amber glass bottles for total recoverable petroleum hydrocarbons
- 1 - 32 ounce polyethylene bottle for dissolved TAL metals

VOC sample vials were filled completely so that water formed a convex meniscus at the top, then capped such that no air space existed in the vial. Sample bottles for SVOCs, TRPH, and TAL metals were filled almost full and capped quickly. For dissolved TAL metals analysis, samples were filtered in the field using a 0.45  $\mu$  filter before filling the appropriate sample containers.



Job No. :	24632
Prepared by :	D.A.K.
Date :	11/19/98

### GROUNDWATER POTENTIOMETRIC SURFACE MAP

DOW CHEMICAL COMPANY USA  
MAGNESIUM EXTRUSION FACILITY



The purpose of the soil and groundwater sampling was to determine the current environmental conditions at the facility. A total of 13 soil samples (including 1 field duplicate and 1 matrix spike/matrix spike duplicate) and 14 groundwater samples (including 1 field duplicate and 1 matrix spike/matrix spike duplicate) were collected, sent to Quanterra Environmental Services Laboratory in Arvada, Colorado, and analyzed for VOCs, SVOCs, TRPH, and TAL metals.

The analytical results were checked by Woodward-Clyde for the following QA/QC components to evaluate the quality and usability of the data:

- Holding Times
- Laboratory Method Blanks
- Laboratory Control Samples
- Surrogate Recoveries
- Matrix Spike Sample Analysis
- Matrix Spike Duplicate Analysis
- Duplicate Sample Analysis
- Overall Assessment of Data

The VOC and TRPH results for soil and groundwater samples collected during the Phase II investigation are summarized in Tables 4-1 and 4-3, respectively. The metals results for soil and groundwater samples are summarized in Tables 4-2 and 4-4, respectively. The laboratory analytical data sheets are contained in Appendix E along with Woodward-Clyde's QA/QC evaluation. These data have been validated by Woodward-Clyde and appropriate data qualifiers are included with the results.

#### **4.1 ANALYTICAL RESULTS FOR SOIL SAMPLES**

One surface soil and 13 subsurface soil samples were collected and analyzed for the following:

- volatile organic compounds (VOCs) - (SW-846 / 8260)
- semivolatile organic compounds (SVOCs) - (SW-846 / 8270)
- total recoverable petroleum hydrocarbons (TRPH) - (SW-846 / 3550 and SW-846 / 418.1)
- total target analyte list (TAL) metals - (SW-846 / 6010A and SW-846 / 7471A)
  - aluminum, antimony, arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, nickel, potassium, selenium, silver, sodium, thallium, vanadium, zinc.

##### **Volatile Organic Compounds**

Seven VOCs were detected in three subsurface soil samples (Table 4-1 and Figure 4-1). All seven VOCs were detected in the subsurface soil sample collected at a depth of 3 feet bgs in monitoring well boring DMW-08 (located downgradient of the 1800-ton press pit in the mill building). Acetone (250 µg/kg), chloroethane (14 µg/kg), 1,1-dichloroethane (110 µg/kg),

tetrachloroethene (8.2 µg/kg), 1,1,1-trichloroethane (26 µg/kg), total xylenes (10 µg/kg), and 2-butanone (42 µg/kg) were detected above the reporting limit. Acetone was also detected in two other subsurface soil samples; 23 µg/kg at a depth of 4 feet bgs in monitoring well boring DMW-06 (located downgradient of the 4200-ton press pit in the main building), and 22 µg/kg at a depth of 6 feet bgs in soil boring DSB-02 (located in the former Otis operations area in the main building). Acetone and 2-butanone are common laboratory contaminants and are not considered to be site related. The other compounds are common constituents of solvents.

#### **Semivolatile Organic Compounds**

No SVOCs were detected above the reporting limits in the soil samples.

#### **Total Recoverable Petroleum Hydrocarbons**

TRPH, at concentrations of 2,970 mg/kg (3.0 feet bgs) and 2,700 mg/kg (12 feet bgs), was detected in two subsurface soil samples (Table 4-1), collected in boring DMW-08, the same sample in which the VOCs were detected. TRPH was also detected at concentrations of 102 mg/kg (boring DSB-04) and 974 mg/kg (boring DSB-05) in two samples collected in the drum storage area. At boring DMW-06 west of the 4200-ton press, TRPH was detected at 25.7 mg/kg.

#### **Total TAL Metals**

The total metals results (Table 4-2) indicate that 20 of 23 TAL metals were detected in one or more of the soil samples. The following metals were detected:

- aluminum - 14 samples -- 1,440 to 17,700 mg/kg
- arsenic - 14 samples -- 1.2 to 4.1 mg/kg
- barium - 14 samples -- 25.4 to 282 mg/kg
- cadmium - 2 samples -- 0.6 to 0.73 mg/kg
- calcium - 14 samples -- 869 to 8,060 mg/kg
- chromium - 14 samples -- 1.8 to 19.4 mg/kg
- cobalt - 14 samples -- 2.2 to 12.7 mg/kg
- copper - 14 samples -- 2.5 to 28.1 mg/kg
- iron - 14 samples -- 4,830 to 22,800 mg/kg
- lead - 14 samples -- 2.8 to 44.5 mg/kg
- magnesium- 14 samples -- 375 to 4,730 mg/kg
- manganese- 14 samples -- 162 to 552 mg/kg
- mercury - 1 sample -- 0.10 mg/kg
- nickel - 11 samples -- 5.2 to 15.2 mg/kg
- potassium - 13 samples -- 619 to 3,830 mg/kg
- selenium - 14 samples -- 0.52 to 1.6 mg/kg
- thallium - 2 samples -- 1.1 to 1.3 mg/kg

- vanadium - 14 samples -- 9.4 to 39.2 mg/kg
- zinc - 14 samples -- 8.9 to 104 mg/kg

## **4.2 ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES**

Groundwater samples were collected and analyzed for the following:

- volatile organic compounds (VOCs) - (SW-846 / 8260)
- semivolatile organic compounds (SVOCs) - (SW-846 / 8270)
- total recoverable petroleum hydrocarbons (TRPH) - (SW-846 / 3550 and SW-846 / 418.1)
- dissolved target analyte list (TAL) metals - (SW-846 / 6010A and SW-846 / 7470A)  
aluminum, antimony, arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, nickel, potassium, selenium, silver, sodium, thallium, vanadium, zinc.

Results of the laboratory analyses for the groundwater samples are discussed below.

### **Volatile Organic Compounds**

Five VOCs (1,1-dichloroethane [1,1-DCA], 1,2-dichloroethene [1,2-DCE], tetrachloroethene [PCE], toluene, and 1,1,1-trichloroethane [1,1,1-TCA]) were detected in 6 of 11 monitoring wells DMW-02, DMW-06, DMW-07, DMW-08, DMW-09, and DMW-11 (Table 4-3 and Figure 4-2):

- VOCs were detected in two wells (DMW-06: 1,1,1-TCA at 2.1 µg/l; DMW-11: 1,1,1-TCA at 7.5 µg/l) downgradient of the 4200-ton press pit in the main building.
- VOCs were detected in three wells (DMW-08: 1,1-DCA at 5.7 µg/l, toluene at 2.0 µg/l, 1,1,1-TCA at 13 µg/l; DMW-09: 1,1,1-TCA at 1.9 µg/l; and DMW-02: 1,1-DCA at 16 µg/l, 1,2-DCE at 1.1 µg/l, PCE at 1.5 µg/l, 1,1,1-TCA at 43 µg/l) downgradient of the 1800-ton press pit in the mill building.
- VOCs were detected in one well (DMW-07: 1,1-DCA at 13 µg/l, 1,1,1-TCA at 8.6 µg/l) downgradient of the 500-ton press pit in the mill building.

These compounds are common constituents of solvents.

In summary, the following VOCs had detectable concentrations in the 6 groundwater samples:

- 1,1-dichloroethane (1,1-DCA) - 3 samples -- 5.7 to 16 µg/l
- 1,2-dichloroethene (1,2-DCE) - 1 sample -- 1.1 µg/l
- tetrachloroethene (PCE) - 1 sample -- 1.5 µg/l
- toluene - 2 samples -- 1.5 to 2.0 µg/l
- 1,1,1-trichloroethane (1,1,1-TCA) - 5 samples -- 1.9 to 43 µg/l

### **Semivolatile Organic Compounds**

No SVOCs were detected above reporting limits in the groundwater samples.

**Total Recoverable Petroleum Hydrocarbons**

TRPH was not detected above reporting limits in the groundwater samples.

**Dissolved TAL Metals**

The dissolved metals results indicate that 9 of 23 metals were detected in one or more of the samples (Table 4-4). The following metals had detectable concentrations in the groundwater samples:

- antimony - 1 sample -- 0.072 mg/l
- barium - 14 samples -- 0.037 to 0.063 mg/l
- beryllium - 3 samples -- 0.002 to 0.003 mg/l
- calcium - 14 samples -- 80.2 to 156 mg/l
- iron - 3 samples -- 0.177 to 0.247 mg/l
- magnesium- 14 samples -- 10.6 to 15.4 mg/l
- manganese - 14 samples -- 0.016 to 0.26 mg/l
- potassium - 6 samples -- 5.16 to 5.88 mg/l
- selenium - 14 samples -- 0.03 to 0.057 mg/l



TABLE 4-1

**SUMMARY OF VOLATILE AND SEMIVOLATILE ORGANIC COMPOUNDS AND TOTAL RECOVERABLE  
PETROLEUM HYDROCARBONS DETECTED IN SOIL SAMPLES**

**The Dow Chemical Company USA, Magnesium Extrusion Facility  
Aurora, Colorado**

Monitoring Well / Soil Borehole Number	Sample Number	Sample Depth (Ft-BGS)	Date Sampled	Time Sampled	QA/QC Sample Type	Headspace Reading (ppmv)	Laboratory Analytical Results								
							Acetone (µg/kg)	Chloro- ethane (µg/kg)	1,1-Dichloro- ethane (µg/kg)	Tetrachloro- ethene (µg/kg)	1,1,1-Trichloro- ethane (µg/kg)	Total Xylenes (µg/kg)	2-Butanone (µg/kg)	SVOC (µg/kg)	TRPH (mg/kg)
DMW-04	DMW04-S-06	6 to 8	12-May-98	8:27		1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND
DMW-05	DMW05-S-08	8 to 10	12-May-98	14:00		0.0	ND	ND	ND	ND	ND	ND	ND	ND	ND
DMW-06	DMW06-S-04	4 to 6	13-May-98	14:43		0.4	23	ND	ND	ND	ND	ND	ND	ND	25.7
DMW-07	DMW07-S-02	2 to 4	14-May-98	15:15		15.0	ND	ND	ND	ND	ND	ND	ND	ND	ND
	DMW07-S-02 D	2 to 4	14-May-98	15:17	FD	15.0	ND	ND	ND	ND	ND	ND	ND	ND	ND
DMW-08	DMW08-S-03	3 to 6	15-May-98	8:55		120.0	250	14	110	8.2	26	10	42	ND	2,970
	DMW08-S-12	12 to 14	15-May-98	9:25		30.0	ND	ND	ND	ND	ND	ND	ND	ND	2,700
DMW-09	DMW09-S-02	2 to 4	15-May-98	11:05		0.0	ND	ND	ND	ND	ND	ND	ND	ND	ND
DMW-11	DMW11-S-20	20 to 22	14-May-98	9:30		15.0	ND	ND	ND	ND	ND	ND	ND	ND	ND
DSB-01	DSB01-S-04	4 to 6	12-May-98	17:20		0.3	ND	ND	ND	ND	ND	ND	ND	ND	ND
DSB-02	DSB02-S-06	6 to 8	13-May-98	8:30		0.8	22	ND	ND	ND	ND	ND	ND	ND	ND
	DSB02-S-18	18 to 19.5	13-May-98	9:05		0.8	ND	ND	ND	ND	ND	ND	ND	ND	ND
DSB-03	DSB03-S-02	2 to 4	13-May-98	11:00		0.3	ND	ND	ND	ND	ND	ND	ND	ND	ND
DSB-04	DSB04-S-04	4 to 6	14-May-98	18:28		2.0	ND	ND	ND	ND	ND	ND	ND	ND	102
DSB-05	DSB05-S-00	0 to 2	14-May-98	18:40		1.0	ND	ND	ND	ND	ND	ND	ND	ND <sup>1</sup>	974
	DSB05-S-00 MS/MSD	0 to 2	14-May-98	18:40	MS/MSD	1.0									
Number of Detections							3	1	1	1	1	1	1		0
Minimum Concentration Detected							22	14	110	8.2	26	10	42		26
Maximum Concentration Detected							250	14	110	8.2	26	10	42		2970
Chemical-Specific Standards or Goals															
EPA Region III Risk-Based Concentrations for Soil (Industrial)							200,000,000	2,000,000	200,000,000	110,000	41,000,000	1,000,000,000	1,000,000,000		None
EPA Region III Risk-Based Concentrations for Soil (Residential)							7,800,000	220,000	7,800,000	12,000	1,600,000	160,000,000	47,000,000		None
Proposed Colorado Soil Remediation Cleanup Standards (Industrial)							None	None	1,000,000	7,680	1,000,000	1,000,000	None		None
Proposed Colorado Soil Remediation Cleanup Standards (Commercial)							None	None	1,000,000	8,970	1,000,000	1,000,000	None		None
Proposed Colorado Soil Remediation Cleanup Standards (Residential)							None	None	546,800	2,020	797,190	1,000,000	None		None
Proposed Colorado Soil Remediation Cleanup Standards (Protective of Groundwater)							None	None	16,500	1,875	62,500	1,000,000	None		None

**TABLE 4-1**

**SUMMARY OF VOLATILE AND SEMIVOLATILE ORGANIC COMPOUNDS AND TOTAL RECOVERABLE  
PETROLEUM HYDROCARBONS DETECTED IN SOIL SAMPLES**

**The Dow Chemical Company USA, Magnesium Extrusion Facility  
Aurora, Colorado**

UJ = estimated reporting limit.

<sup>1</sup> Several semivolatile organic compounds were qualified "UJ" based on low matrix spike recoveries.

Ft-BGS	feet below ground surface	FD	= field duplicate
ppmv	parts per million by volume	MS/MSD	= matrix spike/matrix spike duplicate
µg/kg	micrograms per kilogram	ND	= not detected
mg/kg	milligrams per kilogram	NS	= no standard
TRPH	total recoverable petroleum hydrocarbons	NA	= not applicable

TABLE 4-2

## SUMMARY OF TARGET ANALYTE LIST METALS DETECTED IN SOIL SAMPLES

**The Dow Chemical Company USA, Magnesium Extrusion Facility  
Aurora, Colorado**

Monitoring Well / Soil Borehole Number	Sample Number	Sample Depth (Ft-BGS)	Date Sampled	Time Sampled	QA/QC Sample Type	Laboratory Analytical Results							
						Aluminum (mg/kg)	Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Calcium (mg/kg)	Chromium (mg/kg)
DMW-04	DMW04-S-06	6 to 8	12-May-98	8:27		10100	7.3 UJ	3.3	252	0.75	ND	5770	11.4
DMW-05	DMW05-S-08	8 to 10	12-May-98	14:00		7680	6.4 UJ	3.3	134	0.67	0.6	2940	9.5
DMW-06	DMW06-S-04	4 to 6	13-May-98	14:43		14700	6.7 UJ	3.3	262	1.1	ND	7970	15.6
DMW-07	DMW07-S-02	2 to 4	14-May-98	15:15		6800	7.2 UJ	2.9	127	0.47	ND	2760	8.2
	DMW07-S-02 D	2 to 4	14-May-98	15:17	FD	6900	6.9 UJ	2.2	150	0.5	ND	4220	8.1
DMW-08	DMW08-S-03	3 to 6	15-May-98	8:55		13200	7.5 UJ	4.1	282	0.84	ND	7790	13.7
	DMW08-S-12	12 to 14	15-May-98	9:25		2840	6.3 UJ	1.2	63.0	0.24	ND	1500	4.4
DMW-09	DMW09-S-02	2 to 4	15-May-98	11:05		5910	6.9 UJ	2.5	107	0.43	ND	1950	7.0
DMW-11	DMW11-S-20	20 to 22	14-May-98	9:30		3060	7.5 UJ	1.8	62.9	0.28	ND	1140	4.2
DSB-01	DSB01-S-04	4 to 6	12-May-98	17:20		17000	6.8 UJ	3.1	211	1.2	ND	8060	19.4
DSB-02	DSB02-S-06	6 to 8	13-May-98	8:30		11500	6.5 UJ	2.3	180	0.76	0.73	5430	12.2
	DSB02-S-18	18 to 19.5	13-May-98	9:05		1440	6.2 UJ	1.2	25.4	ND	ND	869	1.8
DSB-03	DSB03-S-02	2 to 4	13-May-98	11:00		11400	6.6 UJ	2.3	148	0.73	ND	4210	11.7
DSB-04	DSB04-S-04	4 to 6	14-May-98	18:28		13000	7.2 UJ	3.4	161	0.80	ND	2880	13.6
DSB-05	DSB05-S-00	0 to 2	14-May-98	18:40		13500	7.0 UJ	3.1	177	0.88	ND	4230	14.0
	DSB05-S-00 MS/MSD	0 to 2	14-May-98	18:40	MS/MSD								
Number of Detections						14	0	14	14	13	2	14	14
Minimum Concentration Detected						1440	6.2	1.2	25.4	0.24	0.6	869	1.8
Maximum Concentration Detected						17000	7.5	4.1	282	1.2	0.73	8060	19.4
Chemical-Specific Standards or Goals													
EPA Region III Risk-Based Concentrations for Soil (Industrial)						1,000,000	820	610	140,000	1.3	1,000	None	1,000,000
EPA Region III Risk-Based Concentrations for Soil (Residential)						78,000	31	23	5,500	0.15	39	None	78,000
Proposed Colorado Soil Remediation Cleanup Standards (Industrial)						None	None	0.82	None	None	694.46	None	208.57
Proposed Colorado Soil Remediation Cleanup Standards (Commercial)						None	None	1.04	None	None	1052.46	None	212.92
Proposed Colorado Soil Remediation Cleanup Standards (Residential)						None	None	0.21	None	None	99.50	None	53.94
Ranges Published by USGS for Denver Area (Shacklette and Boerngen, 1984).						70,000 -- 100,000			700 -- 5,000			12,000 -- 28,000	
							<1.0	2.6 -- 4.1		1.5 -- 15.0	1.0		1.0 -- 20.0

Ft-BGS = Feet below ground surface

mg/kg = milligrams per kilogram

FD = field duplicate

MS/MSD = matrix spike/matrix spike duplicate

ND = not detected

UJ = not detected at estimated reporting limit

3.1

 Boxed values exceed the EPA Region III Risk-Based Concentration for soil ingestion

4.1

 Boxed and shaded values exceed one of the proposed Colorado soil cleanup standards (industrial, commercial, residential).

TABLE 4-2

## SUMMARY OF TARGET ANALYTE LIST METALS DETECTED IN SOIL SAMPLES

**The Dow Chemical Company USA, Magnesium Extrusion Facility  
Aurora, Colorado**

Monitoring Well / Soil Borehole Number	Sample Number	Sample Depth (Ft-BGS)	Date Sampled	Time Sampled	QA/QC Sample Type	Laboratory Analytical Results							
						Cobalt (mg/kg)	Copper (mg/kg)	Iron (mg/kg)	Lead (mg/kg)	Magnesium (mg/kg)	Manganese (mg/kg)	Mercury (mg/kg)	Nickel (mg/kg)
DMW-04	DMW04-S-06	6 to 8	12-May-98	8:27		9.0	13.7	16800	9.6	3150	463	ND	9.3
DMW-05	DMW05-S-08	8 to 10	12-May-98	14:00		6.5	12.3	13200	12.4	2200	330J	ND	7.1
DMW-06	DMW06-S-04	4 to 6	13-May-98	14:43		9.0	18.0	20500	12.7	3950	479	ND	12.9
DMW-07	DMW07-S-02	2 to 4	14-May-98	15:15		5.0	10.3	12400	13.4	1610	344	ND	5.9
	DMW07-S-02 D	2 to 4	14-May-98	15:17	FD	5.7	10.7	11900	13.4	1690	388	ND	6.6
DMW-08	DMW08-S-03	3 to 6	15-May-98	8:55		12.7	28.1	17300	44.5	3360	423	0.10	15.2
	DMW08-S-12	12 to 14	15-May-98	9:25		2.8	4.4	7670	3.7	670	221	ND	ND
DMW-09	DMW09-S-02	2 to 4	15-May-98	11:05		4.5	8.7	10900	12.3	1410	373	ND	5.2
DMW-11	DMW11-S-20	20 to 22	14-May-98	9:30		3.1	5.5	9180	4.4	671	271	ND	ND
DSB-01	DSB01-S-04	4 to 6	12-May-98	17:20		10.6	20.3	22800	14.9	4730	474J	ND	13.9
DSB-02	DSB02-S-06	6 to 8	13-May-98	8:30		8.0	15.2	17700	9.4	3190	407J	ND	9.1
	DSB02-S-18	18 to 19.5	13-May-98	9:05		2.2	2.5	4830	2.8	375	162J	ND	ND
DSB-03	DSB03-S-02	2 to 4	13-May-98	11:00		7.0	13.1	16600	9.1	2960	358J	ND	8.3
DSB-04	DSB04-S-04	4 to 6	14-May-98	18:28		8.1	17.4	17700	19.5	2610	552	ND	11.3
DSB-05	DSB05-S-00	0 to 2	14-May-98	18:40		7.1	17.3	17800	20.5	3070	310	ND	10.9
	DSB05-S-00 MS/MSD	0 to 2	14-May-98	18:40	MS/MSD								
Number of Detections						14	14	14	14	14	14	1	11
Minimum Concentration Detected						2.2	2.5	4830	2.8	375	221	0.1	5.2
Maximum Concentration Detected						12.7	28.1	22800	44.5	4730	552	0.1	15.2
Chemical-Specific Standards or Goals													
EPA Region III Risk-Based Concentrations PRGs for Soil (Industrial)						120,000	82,000	610,000	None	None	47,000	610	41,000
EPA Region III Risk-Based Concentrations PRGs for Soil (Residential)						4,700	3,100	23,000	None	None	1,800	23	1,600
Proposed Colorado Soil Remediation Cleanup Standards (Industrial)						None	27,537	None	1,460	None	None	137.07	None
Proposed Colorado Soil Remediation Cleanup Standards (Commercial)						None	41,522	None	2,920	None	None	176.53	None
Proposed Colorado Soil Remediation Cleanup Standards (Residential)						None	2,570	None	400	None	None	17.66	None
Ranges Published by USGS for Denver Area (Shacklette and Boerngen, 1984).						7.0 -- 10.0	20.0 -- 30.0	20,000 -- 30,000	20.0 -- 700	3,000 -- 7,000	500 -- 700	0.05 -- 0.13	10.0 -- 15.0

Ft-BGS = Feet below ground surface

mg/kg = milligrams per kilogram

FD = field duplicate

MS/MSD = matrix spike/matrix spike duplicate

ND = not detected

J = estimated result

**3.1** Boxed values exceed the EPA Region III Risk-Based Concentration for soil ingestion

**4.1** Boxed and shaded values exceed one of the proposed Colorado soil cleanup standards (industrial, commercial, residential).



TABLE 4-2

## SUMMARY OF TARGET ANALYTE LIST METALS DETECTED IN SOIL SAMPLES

**The Dow Chemical Company USA, Magnesium Extrusion Facility  
Aurora, Colorado**

Monitoring Well / Soil Borehole Number	Sample Number	Sample Depth (Ft-BGS)	Date Sampled	Time Sampled	QA/QC Sample Type	Laboratory Analytical Results						
						Potassium (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Sodium (mg/kg)	Thallium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
DMW-04	DMW04-S-06	6 to 8	12-May-98	8:27		2560	1.2	ND	ND	ND	30.1	45.9
DMW-05	DMW05-S-08	8 to 10	12-May-98	14:00		2540	1.2	ND	ND	ND	24.2	39.7
DMW-06	DMW06-S-04	4 to 6	13-May-98	14:43		3610	1.4	ND	ND	ND	36.0	56.9
DMW-07	DMW07-S-02	2 to 4	14-May-98	15:15		1800	0.83	ND	ND	ND	24.5	31.7
	DMW07-S-02 D	2 to 4	14-May-98	15:17	FD	1790	1.0	ND	ND	ND	23.1	33.8
DMW-08	DMW08-S-03	3 to 6	15-May-98	8:55		3230	1.4	ND	ND	ND	34.4	104
	DMW08-S-12	12 to 14	15-May-98	9:25		619	0.74	ND	ND	ND	16.3	14.4
DMW-09	DMW09-S-02	2 to 4	15-May-98	11:05		1610	0.82	ND	ND	ND	20.3	28.3
DMW-11	DMW11-S-20	20 to 22	14-May-98	9:30		637	0.82	ND	ND	ND	17.5	14.6
DSB-01	DSB01-S-04	4 to 6	12-May-98	17:20		3830	1.6	ND	ND	1.3	39.2	67.1
DSB-02	DSB02-S-06	6 to 8	13-May-98	8:30		2720	1.3	ND	ND	ND	32.4	48.2
	DSB02-S-18	18 to 19.5	13-May-98	9:05		ND	0.52	ND	ND	ND	9.4	8.9
DSB-03	DSB03-S-02	2 to 4	13-May-98	11:00		2680	1.1	ND	ND	1.1	30.1	44.4
DSB-04	DSB04-S-04	4 to 6	14-May-98	18:28		3550	1.4	ND	ND	ND	32.1	53.8
DSB-05	DSB05-S-00	0 to 2	14-May-98	18:40		3390	1.1	ND	ND	ND	31.6	60.2
	DSB05-S-00 MS/MSD	0 to 2	14-May-98	18:40	MS/MSD							
Number of Detections						13	14	0	0	2	14	14
Minimum Concentration Detected						619	0.52	0	0	1.1	9.4	8.9
Maximum Concentration Detected						3830	1.6	0	0	1.3	39.2	104
Chemical-Specific Standards or Goals												
EPA Region III Risk-Based Concentrations PRGs for Soil (Industrial)						None	10,000	10,000	None	0	14,000	610,000
EPA Region III Risk-Based Concentrations PRGS for Soil (Residential)						None	390	390	None	0	550	23,000
Proposed Colorado Soil Remediation Cleanup Standards (Industrial)						None	None	None	None	None	None	None
Proposed Colorado Soil Remediation Cleanup Standards (Commercial)						None	None	None	None	None	None	None
Proposed Colorado Soil Remediation Cleanup Standards (Residential)						None	None	None	None	None	None	None
Ranges Published by USGS for Denver Area (Shacklette and Boerngen, 1984).						20,000 -- 60,000	0.1 -- 0.2	2.0	10,000 -- 100,000	No Data	50.0 -- 70.0	45.0 -- 74.0

Ft-BGS = Feet below ground surface

mg/kg = milligrams per kilogram

FD = field duplicate

MS/MSD = matrix spike/matrix spike duplicate

ND = not detected

**3.1** Boxed values exceed the EPA Region III Risk-Based Concentration for soil ingestion

**4.1** Boxed and shaded values exceed one of the proposed Colorado soil cleanup standards (industrial, commercial, residential).

TABLE 4-3

# SUMMARY OF VOLATILE AND SEMIVOLATILE ORGANIC COMPOUNDS AND TOTAL RECOVERABLE PETROLEUM HYDROCARBONS DETECTED IN GROUNDWATER SAMPLES

## The Dow Chemical Company USA, Magnesium Extrusion Facility Aurora, Colorado

Monitoring Well / Soil Borehole Number	Sample Number	Date Sampled	Time Sampled	QA/QC Sample Type	Laboratory Analytical Results										
					Acetone (µg/l)	Chloro-ethane (µg/l)	1,1-Dichloro-ethane (µg/l)	1,2-Dichloro-ethene (µg/l)	Tetrachloro-ethene (µg/l)	Toluene (µg/l)	1,1,1-Trichloro-ethane (µg/l)	Total Xylenes (µg/l)	2-Butanone (µg/l)	SVOC (µg/l)	TRPH (mg/l)
DMW-01	DMW01-01-01	1-May-98	14:12		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DMW-02	DMW02-01-01	1-May-98	12:33		ND	ND	16	1.1	1.5	ND	43	ND	ND	ND <sup>2</sup>	ND
DMW-03	DMW03-01-01	1-May-98	10:21		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DMW-04	DMW04-01-01	14-May-98	14:27		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND <sup>2</sup>	ND
DMW-05	DMW05-01-01	13-May-98	16:00		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DMW-06	DMW06-01-01	14-May-98	12:11		ND	ND	ND	ND	ND	ND	2.1	ND	ND	ND	ND
DMW-07	DMW07-01-01	14-May-98	18:01		ND	ND	13	ND	ND	ND	8.6	ND	ND	ND	ND
	DMW07-02-01	14-May-98	18:41	FD	ND	ND	14	ND	ND	ND	8.8	ND	ND	ND	ND
DMW-08	DMW08-01-01	15-May-98	12:28		ND	ND	5.7	ND	ND	2.0	13	ND	ND	ND	ND
DMW-09	DMW09-01-01	15-May-98	14:21		ND	ND	ND	ND	ND	ND	1.9	ND	ND	ND	ND
DMW-10	DMW10-01-01	14-May-98	16:04		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DMW-11	DMW11-01-01	14-May-98	9:30		ND	ND	ND	ND	ND	ND	7.5	ND	ND	ND	ND
DSB-01	DSB01-GW-01	12-May-98	18:44		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DSB-02	DSB02-GW-01	13-May-98	9:42		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DSB-03	DSB03-GW-01	13-May-98	12:31		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	DSB03-GW-01 MS/MSD	13-May-98	12:31	MS/MSD											
Number of Detections					0	0	3	1	1	2	5	0	0		0
Minimum Concentration Detected					0	0	5.7	1.1	1.5	2	1.9	0	0		0
Maximum Concentration Detected					0	0	16	1.1	1.5	2.0	43	0	0		0
Chemical-Specific Standards or Goals															
EPA Drinking Water Maximum Contaminant Levels (MCLs)					NS	NS	NS	70	5	1000	200	10000	NS		NS
Colorado Groundwater Drinking Water Standards					NS	NS	NS	70	10	2420	200	NS	NS		NS

Ft-BGS feet below ground surface

µg/l micrograms per liter

mg/l milligrams per liter

TRPH total recoverable petroleum hydrocarbons

FD = field duplicate

MS/MSD = matrix spike/matrix spike duplicate

ND = not detected

NS = no standard

<sup>2</sup> Acid fraction semivolatile analytes were qualified "UJ" based on low surrogate recoveries.

TABLE 4-4

## SUMMARY OF TARGET ANALYTE LIST METALS DETECTED IN GROUNDWATER SAMPLES

**The Dow Chemical Company USA, Magnesium Extrusion Facility  
Aurora, Colorado**

Monitoring Well / Soil Borehole Number	Sample Number	Date Sampled	Time Sampled	QA/QC Sample Type	Laboratory Analytical Results								
					Antimony (mg/l)	Barium (mg/l)	Beryllium (mg/l)	Calcium (mg/l)	Iron (mg/l)	Magnesium (mg/l)	Manganese (mg/l)	Potassium (mg/l)	Selenium (mg/l)
DMW-01	DMW01-01-01	1-May-98	14:12		ND	0.061	ND	156	ND	15.4	0.26	ND	0.054
DMW-02	DMW02-01-01	1-May-98	12:33		ND	0.058	ND	126	ND	11.9	0.051	ND	0.044
DMW-03	DMW03-01-01	1-May-98	10:21		0.072	0.063	ND	140	ND	12.0	0.095	ND	0.057
DMW-04	DMW04-01-01	14-May-98	14:27		ND	0.046	ND	140	ND	14.9	0.137	5.22	0.037
DMW-05	DMW05-01-01	13-May-98	16:00		ND	0.042	ND	103	ND	13.5	0.257	5.34	0.042
DMW-06	DMW06-01-01	14-May-98	12:11		ND	0.038	ND	131	ND	13.6	0.197	ND	0.039
DMW-07	DMW07-01-01	14-May-98	18:01		ND	0.050	ND	117	ND	11.9	0.054	ND	0.036
	DMW07-02-01	14-May-98	18:41	FD	ND	0.037	ND	122	ND	12.0	0.124	ND	0.036
DMW-08	DMW08-01-01	15-May-98	12:28		ND	0.051	ND	80.2	ND	10.6	0.161	ND	0.030
DMW-09	DMW09-01-01	15-May-98	14:21		ND	0.061	ND	88.1	ND	11.4	0.094	5.33	0.032
DMW-10	DMW10-01-01	14-May-98	16:04		ND	0.045	ND	133	ND	13.7	0.072	5.16	0.042
DMW-11	DMW11-01-01	14-May-98	9:30		ND	0.050	ND	119	ND	11.9	0.064	ND	0.038
DSB-01	DSB01-GW-01	12-May-98	18:44		ND	0.047	0.003	98.7	0.247	14.2	0.024	5.88	0.057
DSB-02	DSB02-GW-01	13-May-98	9:42		ND	0.048	0.002	99.7	0.177	13.7	0.046	5.79	0.050
DSB-03	DSB03-GW-01	13-May-98	12:31		ND	0.039	0.002	89.7	0.218	11.9	0.016	ND	0.047
	DSB03-GW-01 MS/MS	13-May-98	12:31	MS/MSD									
Number of Detections					1	14	3	14	3	14	14	6	14
Minimum Concentration Detected					0.072	0.037	0.002	80.2	0.177	10.6	0.016	5.16	0.03
Maximum Concentration Detected					0.072	0.063	0.003	156	0.247	15.4	0.26	5.88	0.057
Chemical-Specific Standards or Goals													
EPA Drinking Water Maximum Contaminant Levels (MCLs)					0.006	2.0	0.004	NS	0.3	NS	0.05	NS	0.05
Colorado Groundwater Drinking Water Standards					NS	1.0	NS	NS	0.3	NS	0.05	NS	0.01

Ft-BGS = feet below ground surface

mg/l = milligrams per liter

ND = not detected

FD = field duplicate

MS/MSD = matrix spike/matrix spike duplicate

NS = no standard

0.064

Boxed and shaded values exceed the more stringent of the two (EPA or Colorado) groundwater drinking water standards

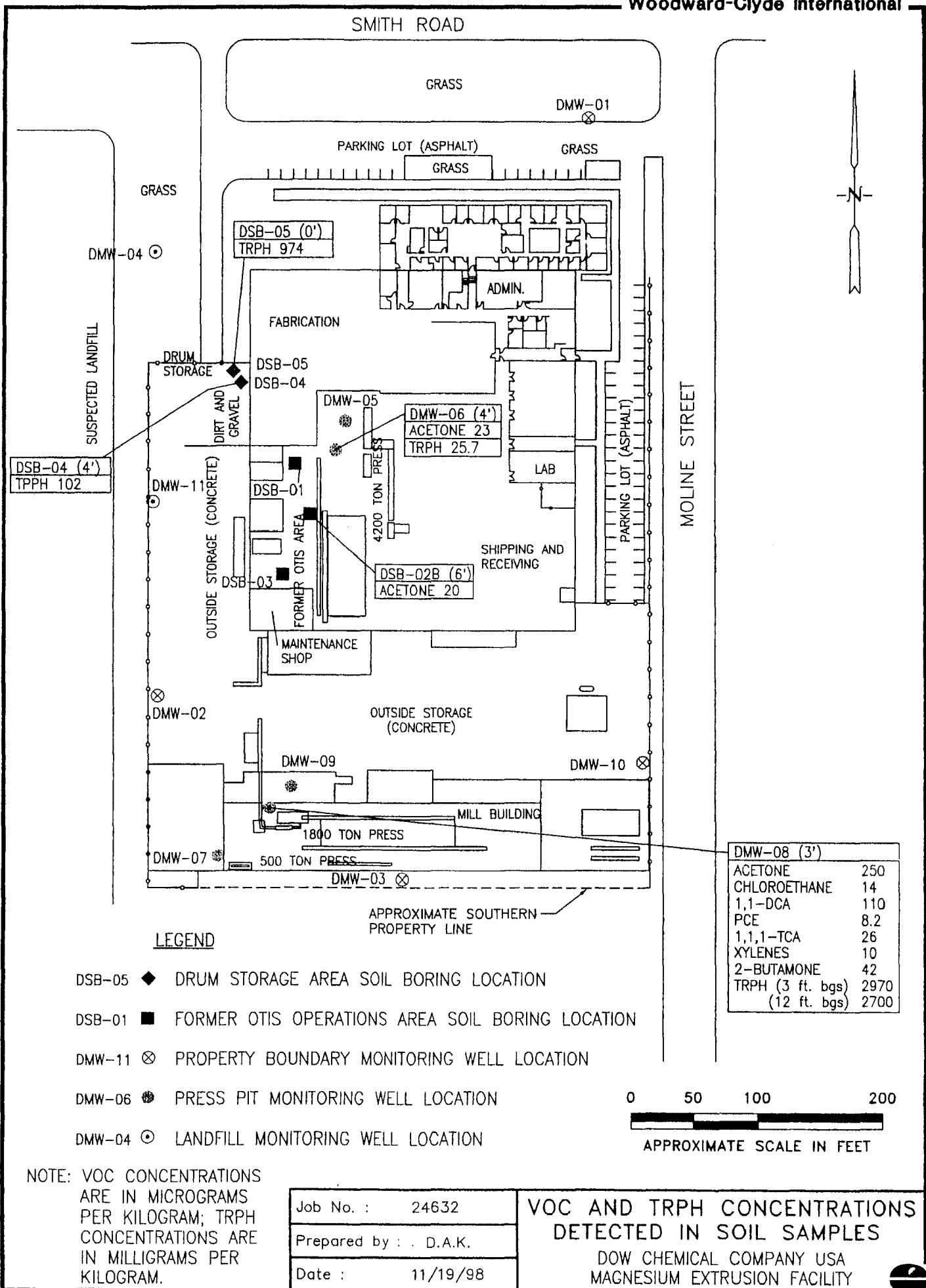
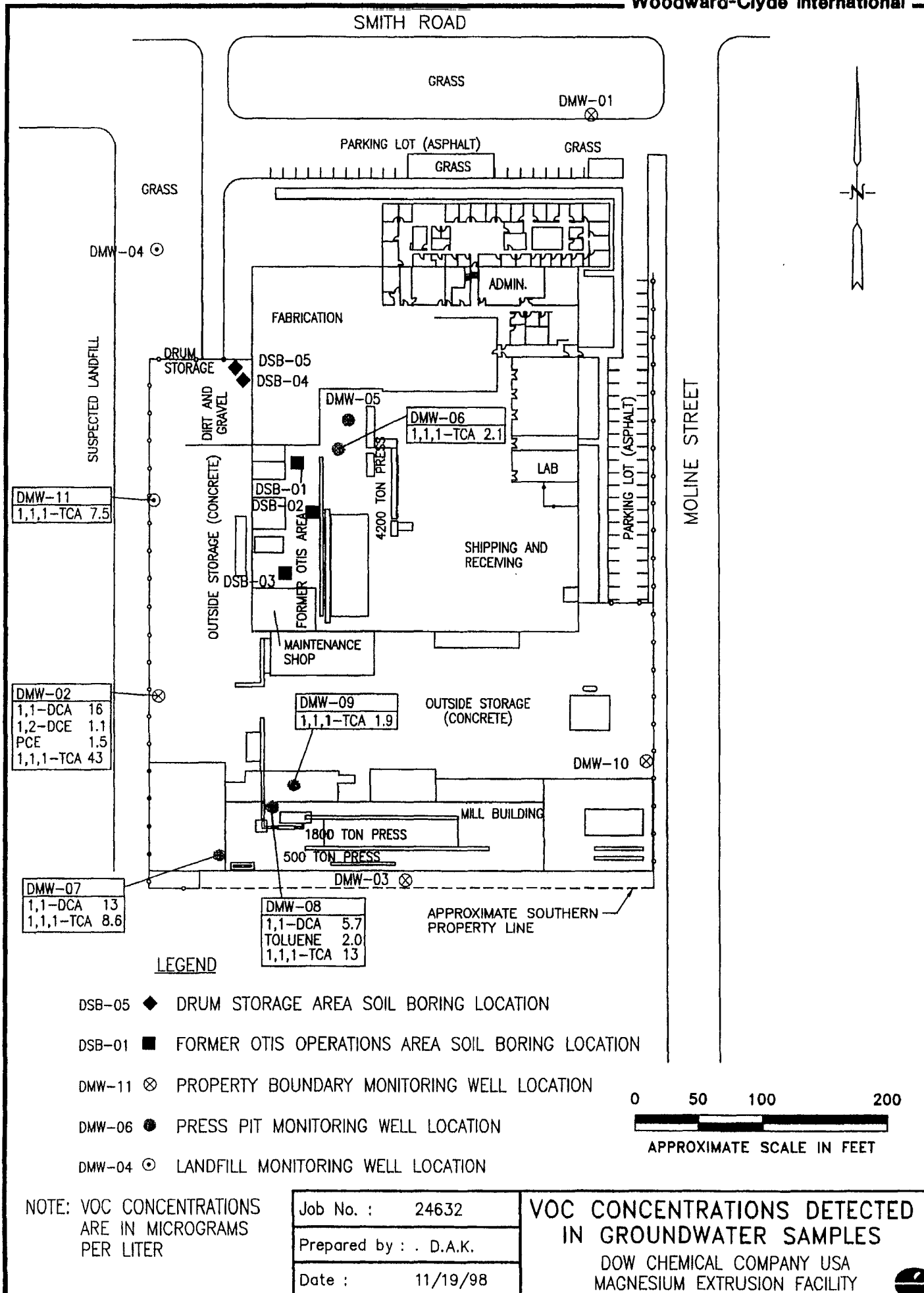


FIG. 4-1





## **SECTION FIVE Comparison of Analytical Results to Regulatory Standards and Goals**

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Organic compounds and metals detected in samples collected and analyzed during the Phase II investigation were compared to the applicable chemical-specific standards or proposed cleanup levels. This screening-level comparison was done to assess whether remedial action may be necessary for detected organic compounds and metals.

### **5.1 SOIL**

For VOCs and metals in soil, the EPA Region III Risk-Based Concentrations (Preliminary Remediation Goals [PRG]) and the Colorado Department of Public Health and Environment, Proposed Soil Remediation Objectives Policy Document, Soil Cleanup Standards were used (Tables 4-1 and 4-2).

Based on a review of the data, none of the VOCs detected exceed EPA Region III risk-based concentrations for ingestion of soil at industrial or residential sites, nor any of the proposed Colorado soil cleanup standards for industrial land use, residential land use, and for protection of groundwater.

For metals detected in the soil samples, arsenic, beryllium, and thallium exceeded screening levels (i.e., either EPA Region III risk-based concentrations for ingestion of soil at industrial or residential sites, or one of the proposed Colorado soil cleanup standards for industrial land use, residential land use, and for protection of groundwater).

Arsenic, detected in all 14 soil samples at concentrations ranging from 1.2 to 4.1 mg/kg, exceeded the Colorado proposed soil cleanup standards for industrial land use (0.82 mg/kg), commercial land use (1.04 mg/kg), and residential land use (0.21 mg/kg). However, arsenic concentrations did not exceed published background levels (Table 4-2).

Beryllium, detected in the one surface soil sample and in 12 of 13 subsurface soil samples, at concentrations ranging from 0.24 to 1.2 mg/kg, exceeded the EPA Region III risk-based concentration of 0.15 mg/kg for ingestion of soil at residential sites but did not exceed levels for industrial sites. Since beryllium was detected in soil borings and monitoring well soil borings located upgradient and downgradient of the press pits and at the property boundaries and concentrations were within published background ranges, this metal is considered to be naturally occurring at these concentrations and not related to site contamination.

Thallium, detected in 2 of 13 subsurface soil samples, at concentrations of 1.1 and 1.3 mg/kg, exceeded the EPA Region III PRG of 0.0 mg/kg for ingestion of soil at industrial and residential sites. Both of these concentrations (1.3 mg/kg in soil boring DSB-01 at 4 to 6 feet bgs and 1.1 mg/kg in soil boring DSB-03 at 2 to 4 feet bgs) are at or very close to the reporting limit of 1.1 mg/kg. Additionally, no information was available on background ranges for this metal.

### **5.2 GROUNDWATER**

For VOCs and metals, the EPA Primary and Secondary Drinking Water Maximum Contaminant Levels (MCLs) and the Colorado Groundwater Standards were used (Tables 4-3 and 4-4). Based on a review of the data, none of the VOCs detected exceed either EPA or Colorado groundwater drinking water standards.

## **SECTION FIVE Comparison of Analytical Results to Regulatory Standards and Goals**

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For metals detected in the groundwater samples, antimony, manganese, and selenium exceeded screening levels (i.e., either EPA or Colorado Drinking Water Standards).

Antimony, detected in monitoring well DMW-03 at a concentration of 0.072 mg/l, exceeded the EPA groundwater drinking water standard of 0.006 mg/l. Since monitoring well DMW-03 is upgradient along the southern property boundary, the presence of antimony does not appear to be site related.

Manganese, detected in all groundwater samples at concentrations ranging from 0.016 to 0.26 mg/l, exceeded the EPA secondary and Colorado groundwater standard of 0.05 mg/l (in 11 of 14 samples). However, since manganese was detected in all monitoring well groundwater samples located upgradient and downgradient of the press pits and the property boundaries, it is considered to be naturally occurring at these concentrations and not related to site activities.

Selenium, detected in all 14 groundwater samples at concentrations ranging from 0.03 to 0.057 mg/l, exceeded the more stringent Colorado groundwater standard of 0.01 mg/l (4 of 14 samples exceeded the EPA drinking water standard of 0.05 mg/l). Selenium was detected in all soil boring and monitoring well groundwater samples located upgradient and downgradient of the press pits and the property boundaries. Additionally, concentrations, in many cases, were higher at upgradient well locations compared to locations immediately downgradient of the press pits and other areas of interest. Therefore, this metal is considered to be naturally occurring at these concentrations and does not appear to be related to site activities.

A Phase II investigation was conducted for the Dow Magnesium Extrusion Facility in Aurora, Colorado from April to May 1998. Conclusions based on information obtained during the Phase II investigation are presented below.

### **Soil**

- Chloroethane (14 µg/kg), 1,1-DCA (110 µg/kg), PCE (8.2 µg/kg), 1,1,1-TCA (26 µg/kg), and xylenes (10 µg/kg) were detected in the subsurface soil sample collected at 3 feet bgs in DMW-08, suggesting a possible release of solvents at the 1800-ton press.
- TRPH was detected at concentrations of 2970 mg/kg (3 feet bgs) and 2700 mg/kg (12 feet bgs) in boring DMW-08. TRPH was also detected at a concentration of 974 mg/kg in a surface sample collected in boring DSB-05.
- No VOCs, or SVOCs were detected in soil samples collected from DSB-04 and DSB-05.
- No VOCs, SVOCs, or petroleum hydrocarbons were detected in soil samples collected from DMW-04 and DMW-11, suggesting that the adjacent, offsite, landfill has not impacted soil on site.
- Although there are no promulgated standards for soil cleanup in Colorado, action levels have recently been proposed by CDPHE. Volatile organics found in soil at the Dow facility did not exceed proposed Colorado standards or US EPA Region III PRGs for soil ingestion.
- Concentrations of several metals in soil (i.e., arsenic, beryllium, and thallium) exceeded US EPA Region III PRGs or proposed Colorado standards for soil. However, the concentrations detected in soil at the Dow facility appear to be within background levels published by the US Geological Survey (except for thallium for which no published data could be found).

### **Groundwater**

- Eleven groundwater monitoring wells were installed and sampled to evaluate groundwater quality at the site. Well screens were placed from the top of the bedrock surface to between 4 and 8 feet above the measured water level at time of drilling. This was done to detect any solvents (dense non-aqueous phase liquid [DNAPL]) which tend to sink to the bottom of the water bearing zone or petroleum hydrocarbons (light non-aqueous phase liquids [LNAPL]) which tend to float on the water surface. Neither DNAPL or LNAPL were present in the wells installed and sampled during the Phase II investigation. Furthermore, the low VOC concentrations are well below solubility concentrations supporting the conclusion that DNAPLs are not present at the site.
- No VOCs, SVOCs, or petroleum hydrocarbons were detected in the groundwater samples from upgradient wells DMW-01, DMW-03, and DMW-10, indicating that contaminants are not migrating on to the property from off-site sources at this time.
- 1,1-DCA (16 µg/l), 1,2-DCE (1.1 µg/l), PCE (1.5 µg/l), and 1,1,1-TCA (43 µg/l) were detected in the groundwater sample from DMW-02, located along the western property boundary, downgradient of the 1800-ton press pit. These data suggest that a release of solvents used at this press has occurred.



- 1,1,1-TCA (2.1 µg/l) was detected in the groundwater sample from DMW-06; 1,1-DCA (13 µg/l) and 1,1,1-TCA (8.6 µg/l) were detected in the groundwater sample from DMW-07; 1,1-DCA (5.7 µg/l), toluene (2.0 µg/l), and 1,1,1-TCA (13 µg/l) were detected in the groundwater sample from DMW-08; 1,1,1-TCA (1.9 µg/l) was detected in the groundwater sample from DMW-09. These data suggest that a release of solvents, likely at the 1,800-ton press, has impacted groundwater.
- Volatile organics found in groundwater at the site did not exceed US EPA drinking water standards (i.e., MCLs) established under the Safe Drinking Water Act or the State of Colorado Groundwater Standards ( 5 CCR 1002-42) promulgated under the Colorado Water Quality Control Act.
- Metals in groundwater at the site exceeding the standards presented above appear to be within background ranges. Concentrations which exceeded standards were found at similar levels in both upgradient and downgradient wells and in one case was only detected in an upgradient well.

#### **EDUCATION AND TRAINING**

B.S., Geological Engineering,  
Michigan Technological University, 1976

Colorado-certified Asbestos Building  
Inspector - #9348

AHERA-accredited Asbestos Inspector

OSHA 40-Hour HAZWOPER  
OSHA Site Supervisor

Colorado Dept. of Transportation Erosion  
Control Supervisor

#### **REGISTRATION**

Professional Geologist Wyoming PG-2961

Professional Scientist Colorado 5107,  
Petroleum Storage  
Tank Committee

#### **EXPERIENCE SUMMARY**

Mr. Luce is a 30-year professional with practical experience as a geologist, engineer, and project/program manager. He qualifies as an Environmental Professional as defined by ASTM based upon his academic training, work experience, and professional registration. He has completed hundreds of Phase I Environmental Site Assessments (ESAs) and reviewed more than 3,000 Phase I ESAs prepared by others. The types of properties assessed have included hundreds of industrial and commercial facilities as well as multi-family residential and vacant lands. These Phase I ESAs have been conducted nationwide during the past 15 years.

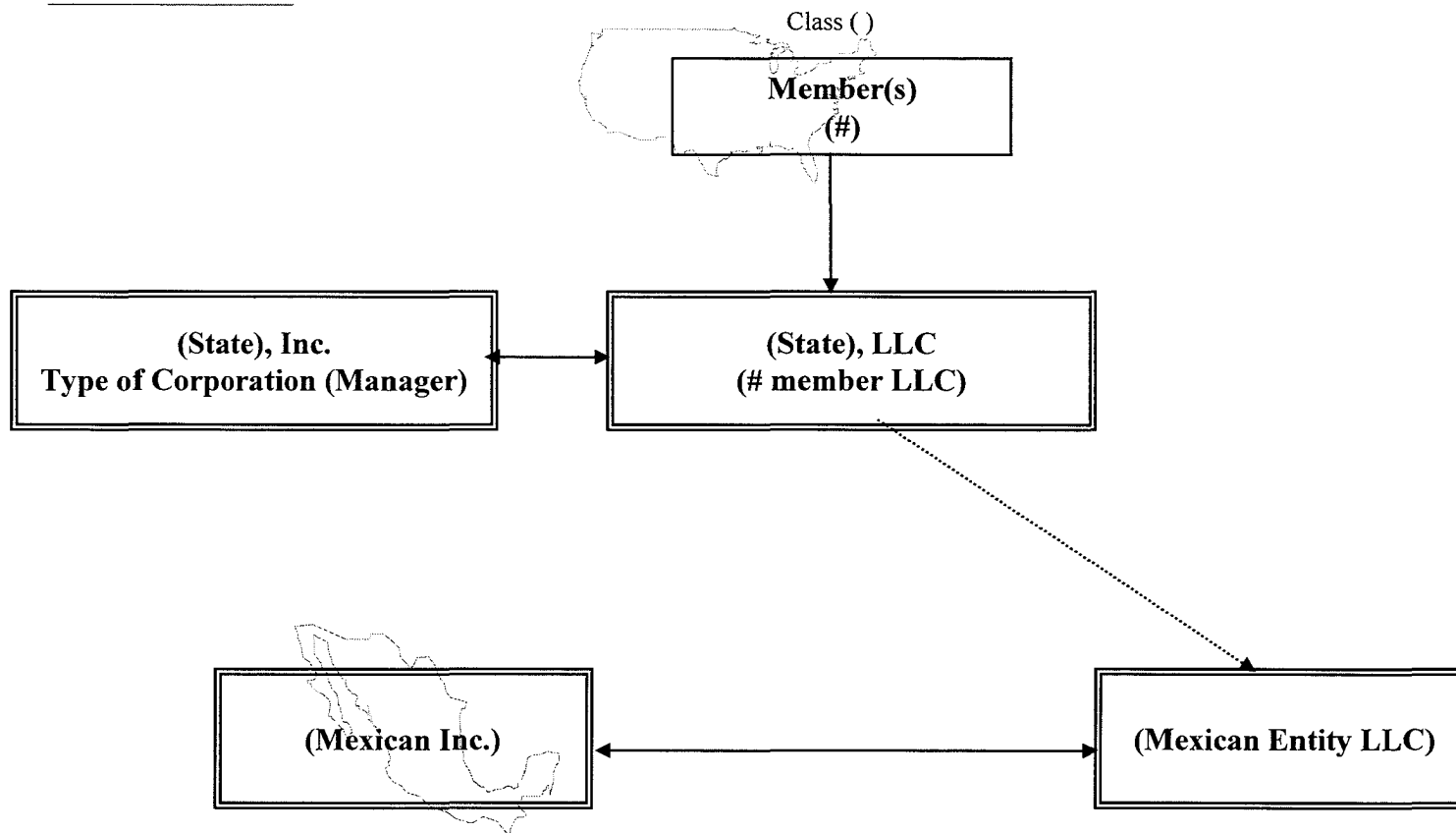
Mr. Luce also has conducted many subsurface investigations at hazardous waste sites, gasoline stations, and oilfield

facilities. These have included numerous industrial and commercial sites, as well as several NPL and RCRA facilities. He has completed regulatory compliance audits, advised clients regarding compliance, waste management and minimization issues, and provided regulatory agency liaison. He also has conducted or supported the development of remedial alternatives studies, remedial designs, and construction oversight.

Mr. Luce has managed several indefinite quantities contracts for both public and private sector clients. These projects have included hazardous waste/materials management, underground storage tank programs, industrial hygiene, and real estate transaction and facilities management support. He has been responsible for overall program/project management including technical quality control, health and safety, client and regulatory liaison. He is experienced at directing and coordinating the efforts of diverse groups of professional and support staff in the completion of concurrent and multi-phase projects.

As part of his ongoing client support, Mr. Luce has conducted private training seminars for environmental due diligence related issues and on the details of ASTM E1527 *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process* and the EPA's new *All Appropriate Inquiry* rule.

## U.S. and Mexican Entity Structure



# Environmental Database Search

## Subject Property

**Commercial Property**  
**11380 Smith Road**  
**Aurora, CO 80010**

Latitude: 39.766679  
Longitude: -104.855528

Performed For: Freedom Environmental  
12808 West 56th Place  
Arvada, CO 80002  
Attn: Rick Luce  
Reference: 0606-076

Contents: Overview Map  
Close-up Map  
Executive Summary

- mapped sites
- unmapped sites

Detailed Findings

- mapped sites
- unmapped sites

Database Sources

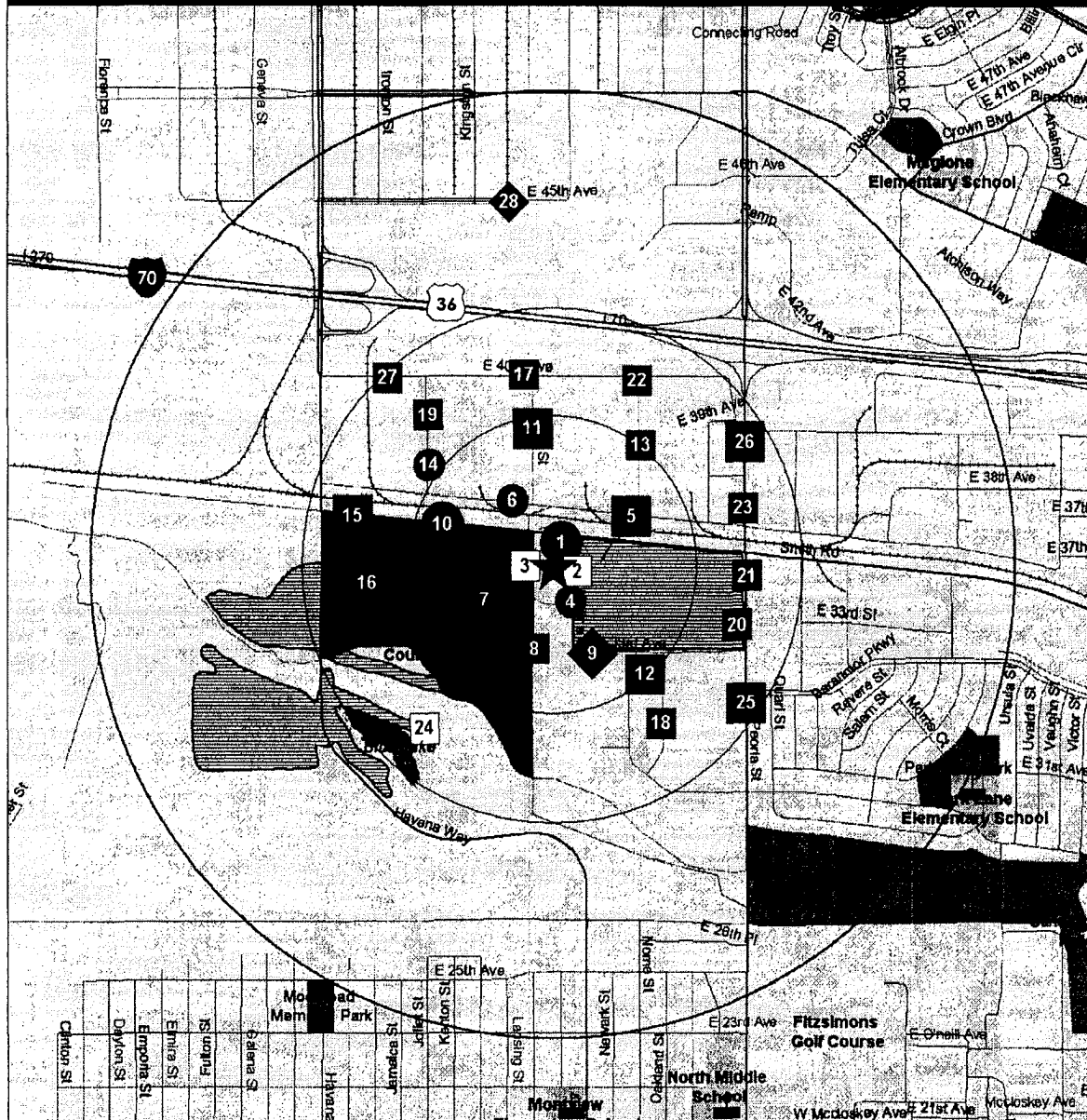
This report complies with the requirements of EPA's AAI Rule and ASTM's E 1527-05 Standard for the records review of standard sources in a Phase One Environmental Site Assessment.


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# Overview Map



Database Categories >		NPL/=/, CORRACT			TSD, CERCLIS/=/, VCL/=/, SOLIDWASTE, TANKLEAK			TANK, AUL/=/, SPILL, GENERATOR, OTHER		
Subject Property		Single Site	Grouped Sites	Regional Site	Single Site	Grouped Sites	Regional Site	Single Site	Grouped Sites	Regional Site
	★	◆	◆	◆	■	■	■	●	●	●

**Subject Property Buffer**  
0.09 mile radius

**Outer Ring on Map**  
1.00 Mile beyond buffer

The ASTM Standard requires that distance be measured from a property's boundaries (not from a point). Accordingly, the specified buffer (dashed ring) has been drawn around the subject property point to approximate its boundaries. Each site point also has a buffer (0.04 mile is standard). Distance is measured from the subject property buffer to each site buffer.